

World Maritime University

The Maritime Commons: Digital Repository of the World Maritime University

World Maritime University Dissertations

Dissertations

1987

Contribution for the formulation of a maritime strategy for Portugal

Joao Prates Bebiano
WMU

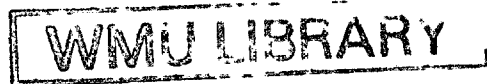
Follow this and additional works at: https://commons.wmu.se/all_dissertations

Recommended Citation

Bebiano, Joao Prates, "Contribution for the formulation of a maritime strategy for Portugal" (1987). *World Maritime University Dissertations*. 793.

https://commons.wmu.se/all_dissertations/793

This Dissertation is brought to you courtesy of Maritime Commons. Open Access items may be downloaded for non-commercial, fair use academic purposes. No items may be hosted on another server or web site without express written permission from the World Maritime University. For more information, please contact library@wmu.se.



WORLD MARITIME UNIVERSITY
Malmo, SWEDEN

CONTRIBUTION FOR THE FORMULATION
OF A MARITIME STRATEGY
FOR PORTUGAL

by
JOAO PRATES BEBIANO

A paper submitted to the Faculty of the World Maritime University in partial satisfaction of the requirements for the award of a

MASTER OF SCIENCE DEGREE
in
GENERAL MARITIME ADMINISTRATION

The contents of this paper reflect my personal views and are not necessarily endorsed by the University.

Signature:

Date

2 October 1987

Supervised and assessed by:
Professor A.A. Monsef
World Maritime University

A.A. Monsef

Co-assessed by:
Professor Ernest A. Frankel
Massachusetts Institute of Technology
Visiting professor of the W.M.U.

CONTENTS

Table of Contents.....	i
List of Tables.....	vi
List of Figures.....	viii
List of Charts.....	ix
Acknowledgments.....	x

CHAPTER I - PURPOSE AND ORGANIZATION 1

1. Purpose and Task	1
2. Scope and Limitations.....	3
3. Methodology.....	3

CHAPTER II - CHARACTERIZATION OF THE PORTUGUESE MARITIME SECTOR 6

1. Brief Introduction.....	6
2. The Portuguese Seaborne Trade.....	6
3. The Fleet.....	9
3.1 - Evolution of the National Fleet versus World Fleet.....	9
3.2 - The Evolution of the Fleet's Ownership.....	10
3.3 - The Fleet-structure.....	11
3.4 - The Fleet-age.....	14
3.5 - The Fleet-trends.....	14
4. Participation of the National Fleet in the Country's Foreign Trade.....	16
5. Maritime Personnel.....	18
5.1 - Evolution of Employment.....	18

5.2 - Manning Costs.....	21
5.3 - Tax and Social Security Contributions.....	23
5.4 - Maritime Education and Training.....	25
6. Ports.....	27
6.1 - Port Traffic Statistics.....	27
6.2 - Structure.....	28
6.3 - Port Charges, Dues and Revenues.....	29
6.4 - Responsibility for Ports' Investment, Maintenance and Port Services.....	29
6.4.1 - Maritime access channels.....	30
6.4.2 - Lights, Buoys and Navigational Aids.....	30
6.4.3 - Sea Locks and Exterior Breakwaters.....	31
6.4.4 - Docks, Quays, Reclaimed Land, Etc.....	31
6.4.5 - Summary.....	31
6.5 - Employment.....	33
6.6 - Docker Training.....	35
6.7 - Main Problems of the Portuguese Ports.....	35
7. Shipping Policy.....	37
7.1 - Introduction.....	37
7.2 - The Present Situation and Future Trends.....	37
7.2.1 - Organization of the Market.....	38
7.2.2 - Incentives to Investment.....	38
7.2.3 - Measures to improve Fleet Competitiveness.....	39
8. Maritime Administration.....	40
8.1 - Introduction.....	40
8.2 - Organization and Main Functions.....	42
8.3 - Basic Problems.....	44
FOOTNOTES AND REFERENCES.....	47

CHAPTER III - MAIN PROSPECTS OF THE SHIPPING INDUSTRY FOR THE 1990s WITH IMPACT IN PORTUGAL.....	48
1. General.....	48
2. Ships and Ship Operation.....	56
3. Development Trend in Ship Management.....	62
4. Ports.....	64
5. Maritime Personnel.....	70
5.1 - Economic Factors.....	70
5.1.1 - Flagging Out.....	71
5.1.2 -Improving Productivity.....	72
5.1.3 -Management: Centralized or Decentralized..	74
5.1.4 -Recruitment, Education and Training.....	74
6. Safety.....	74
7. Current Situation and Future Trends of the EEC's Shipping Policy.....	81
FOOTNOTES AND REFERENCES.....	88/89
CHAPTER IV - TOWARDS THE FORMULATION OF A MARITIME STRATEGY FOR PORTUGAL	90
1. The Concept and Definition of Maritime Strategy	90
2. The Importance of Strategy Thinking.....	92
2.1 - At Maritime Administration Level.....	92
2.2 - At Shipping Industry Level.....	94
2.2.1 - General.....	94
2.2.2 - Strategic Thinking in Shipping: The Norwegian Experience.....	96
3. The EEC's Approach to a Common Maritime Strategy	99
3.1 - Introduction.....	99
3.2 - The Commission's Program.....	100
3.3 - The European Parliament Position.....	100

3.4 - The Economic and Social Committee Position..	101
3.5 - The Community's Role in the World Shipping..	101
3.5.1 - Ship Scapping.....	103
3.5.2 - Raising Standards of Shipping Practice....	103
4. Basics for a Maritime Strategy for Portugal....	104
4.1 - Introduction.....	104
4.2 - Main Factors to be Considered.....	105
5. Formulation of the Strategic Objectives.....	106
5.1 - To Create a Competitive Fleet.....	107
5.2 - To Improve Productivity and Efficiency of the Portuguese Ports.....	108
5.3 - To Promote the Development of a Healthy Maritime Climate.....	109
FOOTNOTES AND REFERENCES.....	110

CHAPTER V - THE FORMULATION OF POLICIES TO ACHIEVE THE OBJECTIVES 111

1. Policies for Developing a Competitive Fleet....	111
2. Policies for Creating a Healthy Maritime Climate	115
2.1 - Maritime Education and Training.....	115
2.1.1 - Introduction.....	115
2.1.2 - Policies.....	118
2.1.3 - Maritime Administration.....	121
2.1.4 - Employment and Social Conditions.....	125
3. Policies for Ports.....	126
3.1 - Introduction.....	126
3.2 - Policies Suggested for the Portuguese Main Ports.....	128

FOOTNOTES AND REFERENCES.....	130
-------------------------------	-----

CHAPTER VI - CONCLUSIONS AND SUGGESTIONS	131
1. On the Present Situation of the Portuguese Maritime Sector.....	131
2. On the Main Trends for Shipping Activities...	132
3. Suggestions.....	134
BIBLIOGRAPHY.....	136
ANNEX I (TABLES 1-4).....	138
Table 1.....	139
Table 2.....	140
Table 3.....	141
Table 4.....	142
ANNEX II (TABLES 1-2).....	143
Table 1.....	144
Table 2.....	145

LIST OF TABLES

	Page
I. - Portuguese Seaborne Trade by Geographic Zones and Type of Cargo.....	7
II. - Portuguese Seaborne Trade by Geographic Zones Imports and Exports.....	7
III. - Evolution of the Portuguese Merchant Fleet versus World Merchant Fleet.....	10
IV. - Ownership of the Portuguese Fleet.....	11
V. - Distribution of the Portuguese Merchant Fleet by Category of Vessel.....	12
VI. - Distribution of World Merchant Fleets by Category of Vessel.....	13
VII. - Average Age of World Fleet and EEC Countries	14
VIII. - Tonnage Under construction for Community Flags on 31 December 1986.....	15
IX. - Participation of the National Fleet in the Country's Foreign Trade.....	17
IX-1 - Estimate of Foreign Currency Spent on Freights, Chartered in Vessels and Leasings	18
X. - Evolution of the Seafarers Employed by the Merchant Marine.....	19

XI. - Portuguese Seafarers Employed on Board Foreign Ships.....	20
XII. - Daily Manning and Operating Costs Compared in USD.....	22
XIII. - Income Tax Percentages Paid by Various EEC Seafarers, on Annual Gross Income....	23
XIV. - Social Security Contributions by Seafarers and Shipowners of EEC countries.....	24
XV. - Portuguese Ports Seaborne Traffic in 1984..	27
TABLE 1 - ANNEX I.....	134
TABLE 2 - ANNEX I.....	135
TABLE 3 - ANNEX I.....	136
TABLE 4 - ANNEX I.....	137

LIST OF FIGURES

	Page
1 - Evolution and Future Trends of Seafarers Employed by the Portuguese Merchant Fleet	19
2 - Organization and Use of Resources.....	41
3 - The Traditional Shipping World and the New Shipping World.....	50
4 - Flagging Out Situation in the Main Maritime Nations	54
5 - Factors Affecting the Development of the Transport Pattern in Shipping.....	56
6 - A Structure of Operating Costs.....	58
7 - Distributed Ship Computer System.....	60
8 - The Development Process in Shipping.....	63
9 - Interactions in Ship Management.....	65
10 - Competitiveness in Road/Rail Transport.....	69
11/12 - The four Stages of Manning Development.....	73
13 - Percentual Distribution of Accident Causes.....	75
14 - The Interaction between Public and Corporate Strategies.....	92

LIST OF CHARTS

	Page
1 - Organization Chart of the Portuguese Port Workers.....	34
2 - Organization and Main Functions of the Portu- guese Maritime Administration.....	42/43
3 - Laid-Up Tonnage, 1983-1987.....	49
4 - The Evolution of Manning Scales in Accordance With Ships' Modernization.....	76
5 - Suggested Reorganization of the Portuguese Maritime Administration.....	122

ACKNOWLEDGMENTS

A project of this kind should be a reflection of contemporary thoughts in the shipping industry and maritime sector as a whole, and it should be an integration of theoretical knowledge with practical experience in the sector.

Therefore, a great deal of time and efforts in writing this project were spent to gather the necessary information through personal interviews, library researches and many visitings to related organizations taking the opportunities at the field trips to various countries such as United Kingdom, Norway, Belgium, Sweden, Federal republic of Germany, Denmark and Poland.

I am grateful to many individuals and organizations who were kind enough to help me in this study.

I am particularly grateful to my country for providing me this opportunity to study here.

Special thanks are extended to the following individuals and organizations:

- 1 - Secretaria de Estado dos transportes e Comunicacoes
Dr. Sequeira Braga, Secretary of State
Dr. Goncalo de Meireles, Head of the Cabinet
Dr. Vieira Conde, Assessor
- 2 - Comissao Nacional IMO
Admiral Leonel Cardoso, President

Direccao-Geral de Pessoal do Mar E Estudos Nauticos
Eng. Jose Oliveira Fariz, Director-General
All the other colleagues and friends

4 - Commission of the European Communities (Directorate
-General VII - Transport)

Mr. Peter J. Powery, Principal Administrator
Mr. Balt Heldring, Maritime Transport and Safety
Division
Mr Paul Ayscough, Administrator

5 - Norwegian Maritime Administration

Mr. Jan Frydenlund, Director, Directorate for Seamen
Mr. Bang Olsen, Head of Division, Directorate for
Seamen
Mr. Arnfinn Stuhayg, Head of Division, Norwegian Mari-
time Directorate
Mr. Arild Riisberg, Oslo Port Authority
Mr. Jens Henning Koefoed, Senior Engineer, State Pol-
lution Control Authority
Mr. Bjorn Gildestad, Institute of Transport Economics
Mr. Aried Nodeland, Deputy Principal, Tonsberg Mariti-
me College
Mr. Johs. Henriksen, Rector, Tonsberg Maritime School

6 - Det Norske Veritas

Mr. Truls Vaa, Research Engineer
Mr. Olav Gundersund, Nautical Surveyor

7 - Norwegian Shipowners Association

Mr. Eilert Hoelfeldt Lund Jr.

8. Norwegian Unions

Mr. Gudmund Asheim, Director, Norwegian Masters Union

Mr. Hans Olav Isakser, Secretary, Norwegian Moped
Association

Mr. Waag Norwegian Seamen Union

9 - Hamburger Hafen - und Lagerhaus - Aktiengesellschaft
(HHLA):

Dr. Hans Ludwig Bath

My deepest gratitude goes to Mr. John C. Hadjipateras and the Greek Shipowners Association who were generous in giving me the fellowship support.

I also owe a great debt to my course professor, Dr. Ahmed Abdel Monsef who has provided me indispensable guidance, ceaseless support and encouragement to carry out this work.

CHAPTER I

PURPOSE AND ORGANIZATION

1.-PURPOSE AND TASK

The purpose of this project is to contribute to the formulation of a maritime strategy for Portugal.

Shipping is one of the most complex activities: it is affected by numberless factors both internal and external. It moves in a particular changeable environment. It is subject to the supply and demand rules although, under imperfect competitive conditions. It is not homogeneous activity as is divided itself into various segments such as liner trade, tramping, etc. Furthermore, countries grouped into different blocks (developing countries, industrialized countries, socialist countries) partake, which in practice means that they assume different and even antagonistic positions. The list could easily be enlarged.

Therefore, to formulate a strategy for shipping, and for the maritime sector, is an extremely difficult task. However that does not justify but better applies to additional efforts to find a right solution.

Otherwise as pointed out by Professor Pierre Houssin "if you do not know where to go any way takes you there".

In turbulent times for shipping, Portugal is faced with one more challenge derived from its EEC membership: to phase out cargo reservations and to compete in the open market with stronger and better organized foreign competitors. The role of the State must also change from direct intervention and protectionism to regulatory and developmental functions.

In this context it is a must to formulate a strategy to cope with the new situation. Such a strategy should consist of determining few and almost static aims served by several coherent and dynamic policies.

The reason for that is because shipping behaves in a very changeable environment constantly demanding new solutions and consequently requiring a system with capability to reach the aims through an adjustable process.

Many people refer to the difficulties in conceiving and implementing an effective maritime strategy due to the complexity and dynamics of shipping and the factors with which it interplays.

However, strategic thinking and planning has a central role in the management of a modern maritime administration. It also provides a practical approach to changing the way an organization is managed.

To quote Graig Hickman and Michael Silva "only those leaders who learn to anticipate and even invent the future will profit from, rather than be surprised by, change".

Although lengthy, this study does not intend to be an accomplished task. Indeed, there is a wide room for discussing and improving. Our purpose is solely to

contribute for the formulation and implementation of effective solutions to the growing problems faced by the Portuguese maritime sector.

2. SCOPE AND LIMITATIONS

The scope of this paper basically involves the merchant fleet, ports, maritime personnel, education and training, maritime administration and maritime policy.

Shipbuilding and ship-repairing have been excluded due to the fact that they are headed by the Ministry of Industry and consequently could not be directly integrated into policies for shipping, which are under the responsibility of the Ministry of Public Works, Transports and Communications.

However, the areas analyzed are considered large enough to identify the main problems of shipping in Portugal to serve the purpose of this project.

There are many limitations; mainly in collecting proper and accurate information and data for ports and shipping companies which naturally limits the possibility to elaborate a more detailed research in certain areas such as analysis of productivity.

3. METHODOLOGY

This project has been conducted mainly through two different methods, that is, library research and practical research.

Library research was undertaken essentially in the World Maritime University's library.

Practical research was fulfilled during our "on-the-job-training" in Norway and field trips to the Federal Republic of Germany, the United Kingdom, Belgium (EEC's DG VII), Sweden and Poland, collecting a great deal of information and registering various points of view which were sedimentary to our approach.

The practical research also includes personal interviews with many experts, visiting professors and technical personnel in different countries and organizations.

The study primarily consists of four different parts:

The first is a "diagnosis" of the Portuguese Maritime Sector. It intends to give a general overview of the present situation and to highlight its strong points and weaknesses.

The second is a theoretical approach of the present situation and future trends in shipping on an international basis with particular emphasis on the EEC countries for obvious reasons.

The intention is to draw a comparative analysis with other developed countries: What they are preparing or intending to do, with the purpose of analysing what strategy Portugal should follow to maintain or achieve comparative advantages in shipping.

The third part deals with the definition of strategy which suits this project and the formulation of the the strategic objectives, taking into consideration, basically, the scenarios described in the previous chapters.

In the fourth part we have constructed a set of policies designed and oriented to reach the objectives. They represent our personal opinion based on the study of various maritime administrations, the theoretical know-how received during the course and our professional experience of more than ten years as Maritime Administrator.

Finally in the fifth part we presented the conclusions based on the main relevant aspects of the analysis.

CHAPTER II

CHARACTERIZATION OF THE PORTUGUESE MARITIME SECTOR

1.- BRIEF INTRODUCTION

The Republic of Portugal is at the extreme south-west edge of Europe; sited on the western side of the Iberian Peninsula.

The country's total area is 92,146 km², including the Atlantic Islands of Madeira and the Azores and their total population is approximately 10,500,000 inhabitants. Portugal possesses a territorial sea of 56,050 km² and its Economic Exclusive Zone (EEZ) amounts to 1,635,300 km².

Due to the geographical situation of the country with its entire western boarder washed by the Atlantic Ocean in all its moods, the Portuguese have always been attracted by the sea; contributing greatly to the advancement of navigation, discovering sea routes to the Cape of Good Hope, India and Brasil and maintaining important ocean trade during five centuries with vast and far away colonies.

2.- THE PORTUGUESE SEABORNE TRADE

Before decolonization a large part of the Portuguese seaborne trade was done with the colonies, mainly Angola and Mocambique, based on flag reservation for their imports and exports.

After the independence of the ex-colonies the situation changed dramatically and Europe became the most important trade partner for goods carried by sea.

As shown in Tables I and II in 1981 the features of Portuguese seaborne trade can be described as follows:

TABLE I

1981 PORTUGUESE SEABORNE TRADE BY GEOGRAPHIC ZONES ('000t)

type of geog. cargo zones	Bulk cargo			General. cargo			Total
	imp.	exp.	s.tt	imp.	exp	s.tt	
Europe	2874	1304	4178	1314	1343	2657	6835
EEC countries	1970	1119	3089	1090	1206	2296	5394
Other W.E.Count.	112	169	281	171	77	248	529
Soc.Eur.Count.	792	16	808	53	60	113	921
Africa	1261	214	1475	857	250	1107	2582
West/East	988	49	1037	462	60	522	1559
Mediterranean	74	110	184	346	119	465	649
South	199	55	254	49	71	120	374
America	5939	51	5990	669	227	896	6886
North	4658	33	4691	284	125	409	5100
Central	1004	10	1014	165	28	193	1207
South	277	8	285	220	74	294	579
Middle East	5011	82	5093	-	30	30	5123
Far East	86	53	139	187	50	237	376
TOTAL	15171	1704	16875	3027	1900	4927	21802

Source: Elaborated with data from INE (National Institute of Statistics)

TABLE II

1981 PORTUGUESE SEABORNE TRADE BY GEOGRAPHIC ZONES (%)

Geographic zones	Imports			Exports		
	Bulk cgo.	Gral.cgo.	total	bulk cgo.	gral.cgo.	total
1.Europe	18.9	43.4	23.0	76.5	70.7	73.4
.EEC Count.	13.0	36.0	16.8	65.7	63.5	64.5
2.Africa	8.3	28.3	11.7	12.6	13.2	12.9
.West/East	6.5	15.3	8.0	2.9	3.2	3.0
3.America	39.2	22.1	36.3	3.0	11.9	7.7
.North Am.	30.7	9.4	27.2	1.9	6.6	4.4
4.Middle East	33.0	-	27.5	4.8	1.6	3.1
5.Far East	0.6	6.2	1.5	3.1	2.6	2.9
TOTAL ()	100.0	100.0	100.0	100.0	100.0	100.0

Source: Elaborated with data from INE

a) In relation to the type of cargo:

- . 77.4% of the Portuguese seaborne trade was bulk cargo and 22.6% general cargo;
- . 89% of the bulk cargo was imports and 10% exports;
- . 39.2% of the bulk cargo imported was mainly grain and coal from North America and 33% was oil products from the Middle East.

b) In relation to the geographical distribution of the seaborne trade:

- . The most important flow of trade is with European countries: 73.4% of the exports and 23.0% of the imports, and in particular with EEC: 64.5% of the exports and 16.8% of the imports;
- . America follows with 36.3% of the imports and 7.7% of the exports;
- . The Middle East represents 27.5% of the imports and 3.1% of the exports;
- . Africa represents 12.9% of the exports and 11.7% of the imports;
- . The Far East is the less significant zone representing 1.5% of the imports and 2.9% of the exports.

c) In relation to the trade pattern:

- . Except Europe the bulk trade is very imbalanced, mainly with America from which 5,939 million tons of cargo was imported and only 51000 tons exported. However it is important to point out that from January 1, 1986 Portugal became an EEC member which implies that the grain earlier bought from the USA will be bought from the EEC.

This will change the importance of the bulk trade from America to Europe implying a significant decrease of distance and consequently the tonnage needed

- . Concerning imports of oil, the Middle East zone comes in the second place in the bulk imports rank and, is obviously a completely imbalanced trade.
- . The general cargo trade which was already dominant with Europe in 1981 as it was pointed out before will tend to increase even more, with Portugal's entry to the EEC and again with an impact on the structure of the fleet needed.

3.- THE FLEET

3.1.-Evolution of the national fleet versus world fleet

Table III shows the evolution of the Portuguese Merchant fleet to the world fleet during the period of 1979-1985 both in number of ships and GRT.

Relative to the number of ships the Portuguese fleet is declining rapidly, falling by 25.5% from 110 to 82 ships. Inversely the world fleet increase by 742 ships which represents an increase of 2.3% . As far as tonnage is concerned the Portuguese fleet had an increase of 31900 GRT relative to 1979 (+3%) while the world fleet had a decrease of 2908000 GRT (-.8%)

In short it means that the Portuguese fleet has had an inverse evolution relative to the world fleet during the referred period.

TABLE III

**EVOLUTION OF THE PORTUGUESE MERCHANT FLEET
VERSUS WORLD MERCHANT FLEET**

(ships>300GRT)

YEAR	NUMBER OF SHIPS				GRT			
	Port.	Index	World	Index	Port.	Index	World	Index
1979	110	100.00	11047	100.00	1063.6	100.00	376774.2	100.00
1980	107	97.27	33733	102.08	1202.5	113.06	382690.1	101.57
1981	101	91.82	34145	103.32	1215.3	114.26	385741.8	102.38
1982	100	90.91	34684	104.95	1240.5	116.63	389095.0	103.27
1983	90	81.82	34691	104.97	1155.5	108.64	386117.7	102.48
1984	87	79.09	34178	103.42	1269.3	119.34	386150.8	102.49
1985	82	74.55	33789	102.25	1095.5	103.00	373866.2	99.23

Source: Shipping Statistics - Institute of Shipping Economics,
Bremen.

3.2.-The Evolution of the fleet's ownership

In 1975 the main shipping companies were nationalized and the State became the country's biggest shipowner with a share of more than 99% of the total merchant fleet.

As shown in Table IV, in 1983 about 2 million DWT representing 0.8% of the total fleet were private. In 1987 this situation changed a little bit but the State still owns 94.2% of the total merchant fleet.

TABLE IU

OWNERSHIP OF THE PORTUGUESE FLEET

Year \ Type of ownership	Public		Private	
	DWT	(%)	DWT	(%)
1983	2 006 380	99.2	16 817	0.8
1987	1 459 932	94.2	90 024	5.8

Source: General Directorate for Merchant Marine (DGMC)

Shipping is a very dynamic activity depending upon quick decisions, personalized leadership and powerful capability to dare risks, which is almost incompatible with the organization and features of public enterprises.

On the other hand to maintain such a high rate of nationalized fleet does not make any sense today considering the country's option by an open market economy, in the context of the EEC, in which private initiative plays a major role. Otherwise, as far as fleet ownership is concerned Portugal is a unique situation within the EEC countries.

3.3 The Fleet - Structure

Table V and VI show the structure of the Portuguese fleet and the world fleet, the comparison of which can be summarized as follows:

- . 64% of the Portuguese fleet consists of oil tanker while for the other EEC countries this percentage is only 28%
- . Bulk carriers represent 18% of the total fleet while for the other EEC countries these ships represent 28% of the fleet
- . The total general cargo and other merchant vessels represent about 30% of the EEC's fleet and only 16.5% of the Portuguese fleet.

In short the conclusion is that the structure of the Portuguese fleet is very much distorted in relation to that of the EEC's fleet and considering our sub-capacity for carrying a substantial part of the Portuguese seaborne trade other than oil, it can be considered as irrational vis-a-vis the country's sea carrying potential and needs.

TABLE V

DISTRIBUTION OF THE PORTUGUESE MERCHANT FLEET
BY CATEGORY OF VESSEL - 1986

TYPE OF SHIP	GRT	(%)
Oil tankers	696 934	64,
Liquefied gas carriers	4 550	0,4
Chemical tankers	1 453	0,1
<u>Total Tankers</u>	702 937	64,5
Bulk carriers	191 914	18,
General cargo	153 260	14,0
Container vessels	9 761	0,9
Passenger and other merchant vessels	17 437	1,6
Total general cargo and other merch.vessels	180 458	16,5
TOTAL ALL SHIPS	1075 309	100,0

Source: DGMC

TABLE VI
DISTRIBUTION OF WORLD MERCHANT FLEETS
BY CATEGORY OF VESSELS - 1986

	World	OECD		EEC	
		MGRT	%	MGRT	%
Oil & oil/chemical tankers	128.43	53.84	41.1	26.72	20.8
Liquefied gas carriers	9.82	5.61	57.1	1.87	19.1
Chemical tankers	3.56	1.24	34.8	0.52	14.6
Other tankers	0.26	0.19	70.4	0.10	38.5
<u>TOTAL TANKERS</u>	<u>142.07</u>	<u>59.88</u>	<u>42.1</u>	<u>29.21</u>	<u>20.6</u>
Bulk/oil carriers	21.26	6.77	31.8	3.41	16.0
Ore/bulk carriers	111.64	40.31	36.1	20.15	18.1
<u>TOTAL OTHER BULK CARRS.</u>	<u>132.90</u>	<u>47.08</u>	<u>35.4</u>	<u>23.56</u>	<u>17.7</u>
General Cargo	72.67	23.78	32.7	12.07	16.6
Cellular containers	19.62	11.62	59.3	6.22	31.7
Ferries, passenger and other merchant vessels	14.16	8.17	57.7	2.94	20.8
<u>TOTAL GENERAL CARGO AND OTHER MERCHANT VESSELS</u>	<u>106.45</u>	<u>43.57</u>	<u>40.9</u>	<u>21.23</u>	<u>20.0</u>
<u>TOTAL ALL SHIPS</u>	<u>381.42</u>	<u>150.53</u>	<u>39.5</u>	<u>74.00</u>	<u>19.4</u>

Source: Lloyd's Register of shipping - Statistical Tables 1986

. MGRT: million gross registered tons -all ships of 100 GRT and over

. % : percentage of world total

3.4 The Fleet-age

The figures in Table VII show that the Portuguese fleet is extremely old with an average age of over 20 years; i.e. almost the double of the EEC's fleet age and more than the double of the world's fleet age.

The Portuguese fleet without basic economic conditions to compete considering the very high operating costs naturally involved is an important factor to take into account. Excluding tankers, most of the ships should be scrapped as soon as possible.

TABLE VII

WORLD MERCHANT FLEET .-1986
GROUP OF FLAGS: EEC AND WORLD

AVERAGE AGE (in years)
OF FLEET ABOVE 100 TON

Wrld.	EEC	Belg.	Denm.	Germ.	Frce.	Greece	It.	Neth.	U.K.	Port	Sp.
9.97	10.96	6.32	8.69	7.91	91.82	12.22	13.74	8.32	11.02	20.70	10.69

Source: Calculations based upon information contained in
Lloyd's Register of Shipping and DGMC

3.5 The Fleet-Trends

Although it is difficult to make precise forecasts of the future size of the fleet, current trends in flagging out, in orders for new ships and in ship scrapping, all indicate that the fleet's decline is set to continue. As Table VIII shows the EEC's tonnage under construction for registration at the beginning of the year amounted to 1,834,357 GRT.

The share of Portugal is almost insignificant, with 0.3% of the tonnage under construction for community flags.

TABLE VIII

TONNAGE UNDER CONSTRUCTION FOR COMMUNITY FLAGS
ON 31 DECEMBER 1986

COUNTRY	GRT	(%) of the total
BELGIUM	65 481	0.3
DENMARK	119 295	
FRANCE	37 350	
FED. REP. GERMANY	96 875	
GREECE	573 840	
IRELAND	2 000	
ITALY	383 464	
NETHERLANDS	107 830	
PORTUGAL	6 243	
SPAIN	186 306	
UNITED KINGDOM	255 673	
TOTAL EEC	1 834 357	

Source: Lloyd's Merchant Shipbuilding Returns

The very low level of orders for new ships has had implications not only for the size and modernization of the Portuguese fleet but also of course for the Portuguese shipbuilding industry facing actually the challenge of survival.

4.-Participation of the National Fleet in the Country's foreign trade

First of all it is important to point out that in average, 95% of the Portuguese imports and 80% of the exports are carried by sea (v.g. Table V)

Accordingly, the merchant navy should be expected to play an important role in the carriage of a significant part of these cargoes. However, as shown in Table IX that does not happen.

In fact, excluding oil whose transportation is subject to a special agreement between shippers and carriers (both are Stated owned corporations). In 1984 the Portuguese fleet carried only 16% of the country's seaborne trade which is far below the UNCTAD Code's 40:40:20 ratio.

This situation represents a dramatic decline relative to 1972/1973 during which the fleet was able to carry about 45% of the national seaborne trade.

Taking the average for the last ten years for which data is available (1975/1984) we come to the conclusion that, except oil, only 13.6% of the imports and 7.4% of the exports are carried by the national fleet. This situation clearly reflects the weak position of the Portuguese fleet and as a consequence there is a high degree of dependency on foreign flags, mainly Greek, Liberian and Spanish for the transportation of our imports, some of which are vital for the nation, not to mention the strong negative impact on the country's balance of payments.

TABLE IX
PARTICIPATION OF THE NATIONAL FLEET
IN THE COUNTRY'S FOREIGN TRADE

SEASONAL TRADE YEARS	IMPORTS					EXPORTS				
	SEASONAL TRADE (2) (1)	CARRIED BY PORTUGUESE SHIPS (2)				SEASONAL TRADE (2) (1)	CARRIED BY PORTUGUESE SHIPS (2)			
		TOTAL	CRUDE OIL	DRY BULK	OTHER CARGOES		TOTAL	CRUDE OIL	DRY BULK	OTHER CARGOES
1972	96.6	34.1	36.8	35.2	28.8	85.0	14.1	7.4	11.4	16.1
1973	96.7	40.0	54.7	23.1	30.2	83.6	17.9	18.6	13.6	19.2
1974	96.5	43.3	67.2	13.7	22.3	84.9	15.4	17.5	11.7	16.0
1975	96.1	53.6	85.8	7.4	23.6	82.5	14.3	17.9	9.0	15.7
1976	96.5	46.6	77.4	12.2	25.4	80.4	13.9	8.5	6.6	16.3
1977	95.5	32.6	90.9	11.9	14.2	78.6	12.4	18.7	7.3	13.3
1978	95.7	22.1	69.0	11.4	15.1	74.7	8.6	1.9	5.9	9.9
1979	95.6	26.4	55.0	6.9	15.0	75.6	7.6	0.3	5.7	9.6
1980	94.5	23.4	61.1	6.1	16.2	78.8	6.2	3.9	2.5	7.6
1981	93.7	18.0	31.7	7.9	7.8	79.7	5.8	0.0	2.1	7.9
1982	92.5	24.0	35.7	17.2	7.8	77.5	6.6	3.0	4.3	7.3
1983	94.6	43.2	71.3	16.6	11.4	81.3	3.9	0.1	4.1	4.7
1984	92.9	43.7	70.7	15.5	8.6	79.7	4.1	2.0	3.4	4.5

Source: DGMC

(1) - IN RELATION TO ALL FOREIGN TRADE

(2) - GOODS CARRIED BY THE PORTUGUESE FLEET AS
PERCENTAGE OF TOTAL GOODS CARRIED BY SEA

As a consequence of the situation described before, important and increasing amounts of foreign currency are being expended representing at present a significant burden for the country's balance of payments.

As Table IX-1 shows in 1985 Portugal spent 63.4 million "contos" (approximately 420 million U.S.\$) on payment of freights to foreign ships and chartered in and leasing tonnage.

TABLE IX-1

ESTIMATE OF FOREIGN CURRENCY SPENT ON FREIGHTS,
CHARTERED VESSELS AND LEASINGS (*)

YEAR	Freights paid to foreign ships	payments of chartered tonnage and leasing	TOTAL	79-75 (%)
1979	13 124	5 856	18 980	234%
1980	18 845	7 120	25 965	
1981	24 148	10 625	34 413	
1982	29 846	9 029	38 875	
1983	34 796	9 705	44 501	
1984	45 818	12 916	58 734	
1985	52 076	11 327	63 403	

Source: Secretary of State of Transport and Communications

(*) CURRENT 'CONTOS' . ONE 'CONTO' = 1000 ESCUDOS

It is important to stress that the situation has deteriorated so sharply during the last six years that:

- a) "freights payed to foreign ships" increased 296%
- b) "payments of chartered in tonnage and leasings" 93%
- c) total payments (a+b) 234%

5.- MARITIME PERSONNEL

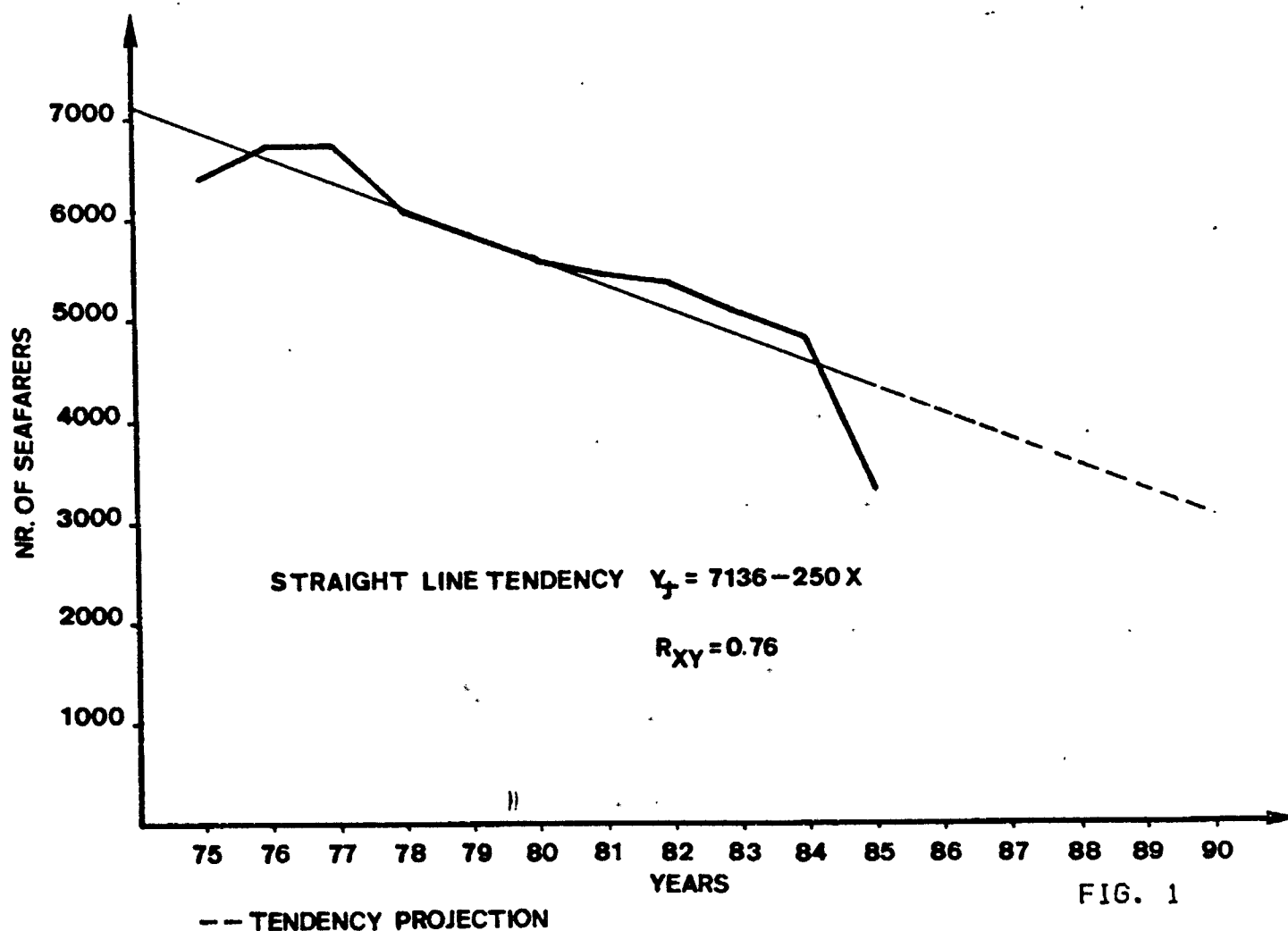
5.1 Evolution of Employment

Following the decline in numbers of ships the total number of seafarers employed by the merchant fleet has also been declining amounting to a reduction of 45.7% in 1985, relative to 1982 (Table X).

EVOLUTION OF SEAFARERS EMPLOYED
THE MERCHANT MARINE

YEAR	NUMBER OF SEAFARERS EMPLOYED BY THE M.M.FLEET		OFFICERS		OTHER CREW MEMBERS	
		Δ %		Δ %		Δ %
1975	6 394		1 304	20.4	5 090	79.6
1976	6 600	+3.2	1 337	20.3	5 263	79.6
1977	6 629	+0.4	1 417	21.4	5 212	78.6
1978	6 194	-6.6	1 383	22.3	4 811	77.7
1979	5 856	-5.5	1 325	22.6	4 531	77.4
1980	5 738	-2.0	1 363	23.8	4 375	76.2
1981	5 555	-3.2	1 382	24.9	4 173	75.1
1982	5 368	-3.4	1 400	26.1	3 968	73.9
1983	5 111	-4.8	1 302	25.5	3 809	74.5
1984	4 795	-6.2	1 180	24.6	3 615	75.4
1985	2 913	-39.2	800	27.5	1 941	72.5

Source: General Directorate for Seamen and Nautical Education



New regulations introduced in 1985 enable shipowners to reduce the manning scales which also contributed to a sharp decline of seafarers employed during the last two years. Consequently unemployment has increased dramatically reaching the expressive figure of 36% in 1985.

At the same time the number of Portuguese seafarers employed on board foreign vessels has been increased as shown in Table XI.

TABLE XI
PORTUGUESE SEAFARERS EMPLOYED ON BOARD FOREIGN SHIPS

CATEGORIES	1982	1983	1984	1985
Officers	1	1	-	12
Ratings	34	25	14	62
Catering Personnel	191	191	180	207
TOTAL	226	217	194	281

Source: Directorate For Seamen and Nautical Education

It is important to point out that in 1982 the number of seafarers employed on board vessels represented 4% of the total number of seafarers employed by the national fleet and in 1985 it increased to 9.6%. However, considering that the Portuguese crews are one of the least expensive in Europe, as will be analysed in more detail later on, a greater participation of Portuguese seafarers in European ship's crews should be expected.

In our opinion the reasons for that can be summarized as follows:

- .. Severe competition from lower cost crews namely, Filipinos, Indians and Chinese
- .. Restrictive national laws and regulations, according to which no Portuguese seafarer can embark on foreign

vessels unless he has obtained from the maritime authorities a "special license" which is only issued if the seafarer has a contract proving that the salary is in accordance with ITF standards

- . Lack of fluency in English and/or French which is normally a pre-requisite for recruiting

5.2 Manning Costs

Manning costs are normally considered one of the most important components of the operating costs (*) and one of the few areas in which a shipowner can attempt to reduce cost, usually taking the following measures:

- . reduce the number of crew
- . replace national ratings with low costs ratings
- . flag out and introduce any mix and size of crew which is acceptable to the owner within certain limitations

It is then important to analyze the relative position of manning costs (1) in the context of the European Community in order to evaluate the competitive position of Portugal in this respect.

Table XII highlights two important points. First of all the importance of manning costs as a percentage of the total operating costs, is up to 57% for Italy. Secondly the favorable competitive position of Portugal within all EEC countries.

(*) In a cost comparison there are two ways of looking at manning costs which naturally affects its importance. One considers solely the operating costs, i.e. (i) manning (ii) repair and maintenance (iii) stores (iv) lubrication oil (v) insurance and (vi) overhead. Another considering the overall cost, i.e. those referred to before plus fuel and capital.

TABLE XII
DAILY MANNING AND OPERATING COSTS COMPARED IN USD.
(1,500 TEU VESSEL, OCTOBER 1986 POSITION)

Country	Cost Item	Crew size	Manning cost (1)	Operating cost (2)	1/2 (%)
BELGIUM		22	3586	6654	54%
DENMARK		21	3228	6414	50%
FRANCE		23	4030	7177	56%
W. GERMANY		21	3527	6679	53%
GREECE		21	1296	4034	32%
IRELAND		NA	NA	NA	NA
ITALY		21	4070	7113	57%
NETHERLANDS		24	3623	6715	54%
PORTUGAL		30	1352	4056	33%
SPAIN		25	2952	5913	50%
UNITED KINGDOM		24	2817	5741	49%

Source: Maritime Economic Research Center - "A social Survey in Maritime Transport"- Draft Report- Rotterdam, May 1987.

In fact a detailed analysis of those figures shows that although having the largest crew size, it represents only 33% of the total operating cost which, with exception to Greece, represents 2 times less than the U.K. and 3 times less than France and Italy.

Considering that the present regulations related to manning easily allow (for the type of ship referred to) a reduction of the crew size for levels similar to Greece, then the competitive position of Portugal is clearly emphasized in the context of the fleets in the EEC countries.

5.3 Tax and Social Security Contributions

Tables XIII and XIV show the relative position of Portugal concerning tax and social security contributions of seafarers and shipowners.

TABLE XIII
INCOME TAX PERCENTAGES PAID BY VARIOUS NATIONAL
SEAFARERS ON ANNUAL GROSS INCOME (3,500 DWT VESSEL)

NATIONALITY \ CATEGORY	CAPTAIN	CHIEF OFFICER	SECOND ENGINEER	SAILOR A/B
BELGIUM	36.1	32.4	32.0	28.2
DENMARK	NA	NA	NA	NA
FRANCE	11.5	9.1	7.1	2.7
F.R.GERMANY	18.1	16.2	13.7	12.1
GREECE	NA	NA	NA	NA
IRELAND	26.2	21.6	NA	23.9
ITALY	26.5	24.8	23.7	20.4
NETHERLANDS	13.4	9.1	8.5	12.1
PORTUGAL	28.0	25.8	24.8	18.6
SPAIN	23.0	20.3	21.5	16.6
UNITED KINGDOM	19.4	16.9	16.9	18.8

Source: Maritime Economic Research Centre: "A social Survey in Maritime Transport" Rotterdam, 1987

5.3.1 Analysis of the percentage of income taxes

As can be expected, widely ranging percentages are found between countries. The highest rate is applied to a Belgian captain at 36.1%. The lowest rate is 2.7% and is applied to a French sailor A/B

As far as Portugal is concerned, Portuguese seafarers have to pay one of the highest percentages of income taxes. In

fact, excepting Belgium, Portuguese captains, Chief Officers and Second Engineers are paying the highest taxes in the European Community. In the case of a sailor A/B the situation is different, however they are at the same level of their colleagues from the U.K. and still pay a higher percentage than the French, Germans, Dutch and Spaniards.

5.3.2 Analysis of the Social Security Contribution

Table XIV provides details as to what percentages of gross annual incomes are paid in social security contributions.

TABLE XIV
SOCIAL SECURITY CONTRIBUTIONS BY SEAFARERS AND SHIPOWNERS
(as percentage of seafarers' gross annual incomes)

CATEGORY OF SEAFARER NATIONALITY CONTRIBUTOR	CAPTAIN		CHIEF OFFICER		SECOND ENGINEER		SAILOR A/B	
	A	B	A	B	A	B	A	B
BELGIUM	7.8	21.0	7.7	21.1	7.2	20.1	7.4	21.9
DENMARK	NA	NA	NA	NA	NA	NA	NA	NA
FRANCE	18.4	40.0	16.1	40.0	16.4	40.0	20.4	40.0
F.R.GERMANY	12.0	12.0	14.8	14.8	16.9	16.9	16.6	16.6
GREECE	NA	NA	NA	NA	NA	NA	NA	NA
IRELAND	6.1	9.8	7.2	12.3	NA	NA	7.2	12.3
ITALY	8.7	36.1	8.7	36.7	8.7	36.6	8.7	33.9
NETHERLANDS	21.9	19.6	23.7	22.8	23.5	23.0	23.9	22.7
PORTUGAL	11.0	24.5	11.0	24.5	11.0	24.5	11.0	24.5
SPAIN	6.0	29.0	6.0	33.0	6.0	32.8	6.0	37.1
UNITED KINGDOM	6.9	6.3	7.0	6.5	7.0	6.5	7.2	6.8

Source: M.E.R.C. op.cit.

A=Seafarers contribution

B=shipowner contribution

From this Table it is clear that major differences occur. Some countries raise social security at a flat rate irrespective of the level of income as is the case of Portugal and Belgium. Other countries like the Netherlands have a ceiling which means that the total percentage paid on social security is less for higher wages relative to lower wages.

From a seafarer's point of view the Portuguese are in the group of the higher contributors overcome solely by the Dutch, Germans and French (2)

Similarly Portuguese shipowners are also in the highest contributors percentage group, after France, Italy and Spain.

5.4 Maritime Education and Training

The maritime education in Portugal is provided by two schools both situated at Paco D'Arcos in the outskirts of Lisbon: one for ratings and the other for officers.

The school for rating provides one-year courses for

- . ship mechanics
- . motormen
- . seamen
- . cooks
- . stewards

Applicants must possess at least 6 years basic school and satisfy the requirements of health and physical conditions.

The Nautical School "Infante D. Henrique" provides three-year courses for officers in the following areas:

- . Nautical
- . Engineering
- . Electronics and Radiocommunications

The school also provides complementary one-year courses to enable officers to be certified to command positions of Master Mariners, Chief Mates, Chief Engineers, and Chief Radio-Officers. To attend these courses candidates must have the

rank of Second Officer which implies 3 years of sea service.

Recruitment for both schools is subjected to "Numerous clausus" established yearly in accordance with the needs of the merchant fleet.

Candidates for officer's courses are required to have a minimum of 12 years of schooling (basic plus secondary school diplomas).

The Maritime Education offered by the Nautical School is essentially seafaring oriented, and courses to meet the needs of maritime shore based activities are not available.

Consequently the seafarers' possibility of getting jobs ashore is much more reduced.

However it is our personal opinion that the "curricula" of these courses could be better adjusted to the needs of modern command functions and responsibilities, if it includes knowledge of shipboard management, shipping economics, social sciences and maritime law.

At the same time following the decrease of the fleet the schools are suffering from overcapacity and are facing the challenge to justify their survival.

On the other hand, owing to the fact that maritime schools are running under the responsibility of the Ministry of Transport and Communications and their courses are not recognized by the Ministry of Education, creates a considerable impediment to improve further education or to spread the possibility of careers in shore based activities.

Particularly, as far as ratings are concerned, it is important to stress that obsolete legislations still allows people having practical background and a basic education to enter a rating career without attending the Ratings' School which leads to a supply of less skilled personnel and produces a negative impact on the utilization of the school.

It is important to stress, however, that maritime education and training in Portugal satisfy by far the

requirements laid down by the STCW 78 Convention and, as shown in Annex II, has one of the best world performance relative to ship losses.

As a general rule the education of Portuguese seafarers is paid for by the State, which is in accordance with the common practice of the other European countries. Exception to that practice are the payment by the State of short courses fee and paid leave provided by the shipowners for attendance of complementary courses.

6.- PORTS

6.1 Port Traffic Statistics

The main commercial ports in mainland Portugal and its irrespctive share of the seaborne traffic are shown in Table XV.

TABLE XV
SEABORNE TRAFFIC IN 1984
['000 OF TONNES (1)]

COMMERCIAL PORTS	TOTAL	OF WHICH OIL AND OIL PRODUCTS	APPROX. % OF TOTAL TRAFFIC
LISBON	12 256	4 454	33.6
LEIXOES	8 413	4 440	23.1
SINES	12 129	12 129	33.3
SETUBAL	1 743	116	4.8
AVEIRO	615	40	1.7
FIGUEIRA DA FOZ	412	-	1.1
VIANA DO CASTELO	234	-	0.6
PORTIMAO	337	-	0.9
FARO	324	94	0.9
TOTAL	36 463	21 273	100.0

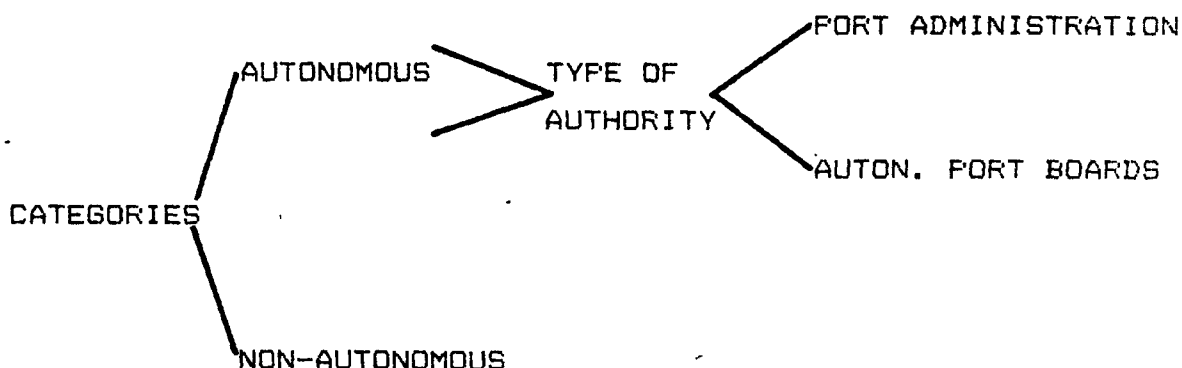
Source: National Institute of Statistics

(1) 1 tonne = 0.9842 tons = 1000 kg.

6.2 Structure

In Portugal sea ports are the property of the State which has the sole responsibility for their operation although, in some cases, certain specific services are carried out by private bodies under licenses.

As far as management is concerned ports fall into the following categories:



The three main ports: Lisbon, Leixoes and Sines are autonomous ports with port administrations. Port administrations have administrative and financial autonomy and legal personality. They are directly responsible to the Ministry of Public Works and Transport and are subjected to economic and financial control by the State. These ports are administered by administrative councils appointed by the Minister and they enjoy a reasonable degree of functional independence. In recent years their sources of financing have been self-financing and bank loans.

Autonomous port boards are regional bodies with administrative and financial autonomy and legal personality. They administer the other secondary ports on behalf of the Government and under the guidance and supervision of the

Directorate General for Ports. Although they enjoy financial independence they are financed by the State budget which funds virtually all their investments and, where necessary their operating deficits.

6.3 Port charges, Dues and Revenues

The port charges levied by the Administration and autonomous boards are laid down in a schedule of charges approved by decree-law. Dues are collected directly by the port authorities except for the charge levied for the use of the port of Leixoes which is collected by the customs.

There is a similar tariff structure in all ports. The ports' main sources of revenue are: port, berthing and anchorage charges and, in the ports of Lisbon and Leixoes a handling charge. In addition to these revenues the most significant sources are receipts from storage (on land and in warehouses), the rental of cranes, floating and lifting equipment, tugs and the supply of water and electricity.

Stevedoring companies who carry out stevedoring handling, and tallying have their own schedule of charges but are subject to the maximum rates approved by the Minister of Public Works, Transport and Communication.

6.4 Responsibility for Ports' Investment, Maintenance and Port Services

The State, normally provides the investment in port access but the administrations and autonomous boards are responsible for the cost of maintaining access channels, external breakwater, locks, etc., and port superstructure including port equipment.

The cost investment in infrastructure i.e. the construction of docks, quays, piers or special terminals are wholly financed by the State in the case of non-autonomous ports and in the case of autonomous port with autonomous port

boards, whereas ports with port administrations finance this type of investment by themselves. The only exception is the port of Sines which receives 100% financing from the Cabinet for the Sines' area.

Considering the significant importance of those costs for a self-financing port and the associated consequences for costs of the services provided by the port and its competitive position among other ports, we are going to analyze in more detail, the position of Portugal as far as cost of investment and maintenance of ports are concerned relative to other main ports of the other EEC countries.

For a question of methodology it is considered that Portuguese ports have a comparative advantage in relation to other European ports whenever the Portuguese Port Authority does not pay costs which are paid by other European Port Authority and vice-versa.

6.4.1 Maritime Access Channels

As shown in Table I Annex 1, the position of Portugal can be summarized as follows:

a) Cost of investment

Portugal has a comparative advantage relative to Spain, Great Britain, Italy, and France, and equal conditions relative to the other EEC countries.

b) Cost of maintenance

Portugal has a comparative disadvantage relative to Greece, Netherlands, Italy, France, Germany and Belgium and has equal conditions as Spain, Great Britain, Ireland and Denmark.

6.4.2 Lights, Buoys and Navigational Aids

Table 2 Annex I, shows that:

a) Cost of investment

Practically all European ports enjoy similar conditions

b) Cost of maintenance

Portugal has a comparative advantage in relation to Spain, Great Britain, Ireland and Denmark and equal conditions relative to the other countries.

6.4.3 Sea Locks and Exterior Breakwaters

From Table 3 Annex I, it is possible to conclude that:

a) Cost of investment

Portugal has a comparative advantage relative to Spain, Great Britain, Ireland and Denmark and enjoys similar conditions as the other countries.

b) Cost of maintenance

Portugal has a comparative disadvantage with Greece, Netherlands, Italy, France, Germany and Belgium.

6.4.4 Docks, Quays, Reclaimed Land, Etc.

Table 4 Annex I, shows that, as far as main Portuguese ports are concerned:

a) Cost of investment

Portugal has a comparative disadvantage with Greece, Italy, France, Germany and Belgium.

b) Cost of maintenance

Portugal has a comparative disadvantage with Greece, Italy, Germany and Belgium.

6.4.5 Summary

As Table XVI shows as far as cost of investment of port infrastructure is concerned solely 3 countries: Greece, Germany and Belgium have global comparative advantages while Spain, Great Britain, Ireland and Denmark have comparative disadvantages relative to Portugal.

TABLE XVI *

PORT INFRASTRUCTURES	ADVANTAGES (+) / DISADVANTAGES (-)			
	COST OF INV.	COST OF MAINT.	I	M
MARIT. ACCESS CHANNELS	4(+): SPAIN ITALY, FRANCE & G. BRITAIN	6(-): GREECE, ITALY, FRANCE, GERMANY, BELGIUM NETHERLANDS	+4	-6
LIGHT, BUOYS & NAV. AIDS G. BRITAIN,	0	4(-): SPAIN, IRELAND & DENMARK	+4	0
SEA LOCKS & EXTERIOR BREAKWATERS	4(+): SPAIN, G. BRITAIN, IRELAND & DENMARK	6(-): GREECE, ITALY, FRANCE, NETH. GERMANY & GERM. & BELGIUM	+4	-6
DOCKS, QUAYS, RECLAIMED LAND, ETC.	5(-): GREECE ITALY, FRANCE GERM. & BELGIUM	4(-): GREECE, ITALY, BELGIUM & GERMANY	-5	-4

*Elaborated from Tables 1-4, Annex I

As far as cost of maintenance is concerned Portugal is in disadvantage relative to: Greece, Italy, France, Belgium, Germany and the Netherlands and in advantage, again, relative to Spain, Great Britain, Ireland and Denmark.

In any case, Portugal has a comparative advantage with Spain. This is a very important fact to stress taking into consideration that Spanish ports are our principal competitors.

Pilotage is a service under the responsibility of the National Institute of Port Pilots (INPP). This body has

administrative and financial autonomy and its own budget and is responsible to the Minister of Public Works and Transport. It has the sole responsibility for the public maritime and river pilotage service which must be used by all national or foreign vessels in ports with pilotage services.

Berthing and provision of water and electricity are under the responsibility of administrations and boards.

Services like stevedoring, tallying, handling, scaling and cleaning, revictualling, bunkering, etc., are performed by private companies.

6.5 Employment

According to the law (Decree-Law No.282 - A/84 of 20 August, 1984), all activities relating to the loading and unloading of commercial vessels and the handling of goods in warehouses and storage areas within ports may be carried out solely by port-workers i.e those who hold a "carteira professional" and are registered.

Registered port-workers are workers registered with the Port-work Coordinating Centers (in Lisbon, Leixoes and Setubal), joint managements organizations (in other ports) or with the port authorities (where there are no coordinating centers or joint management organizations).

Workers registered with the coordinating centers and joint management organizations form the docker pool for each port. These pools are determined by the Minister according to the volume of traffic, existing port equipment and number and constitution of technical teams.

The organization of Port-workers is rather complicated as can be understood from the following chart:

ORGANIZATION CHART OF PORT WORK POOLS

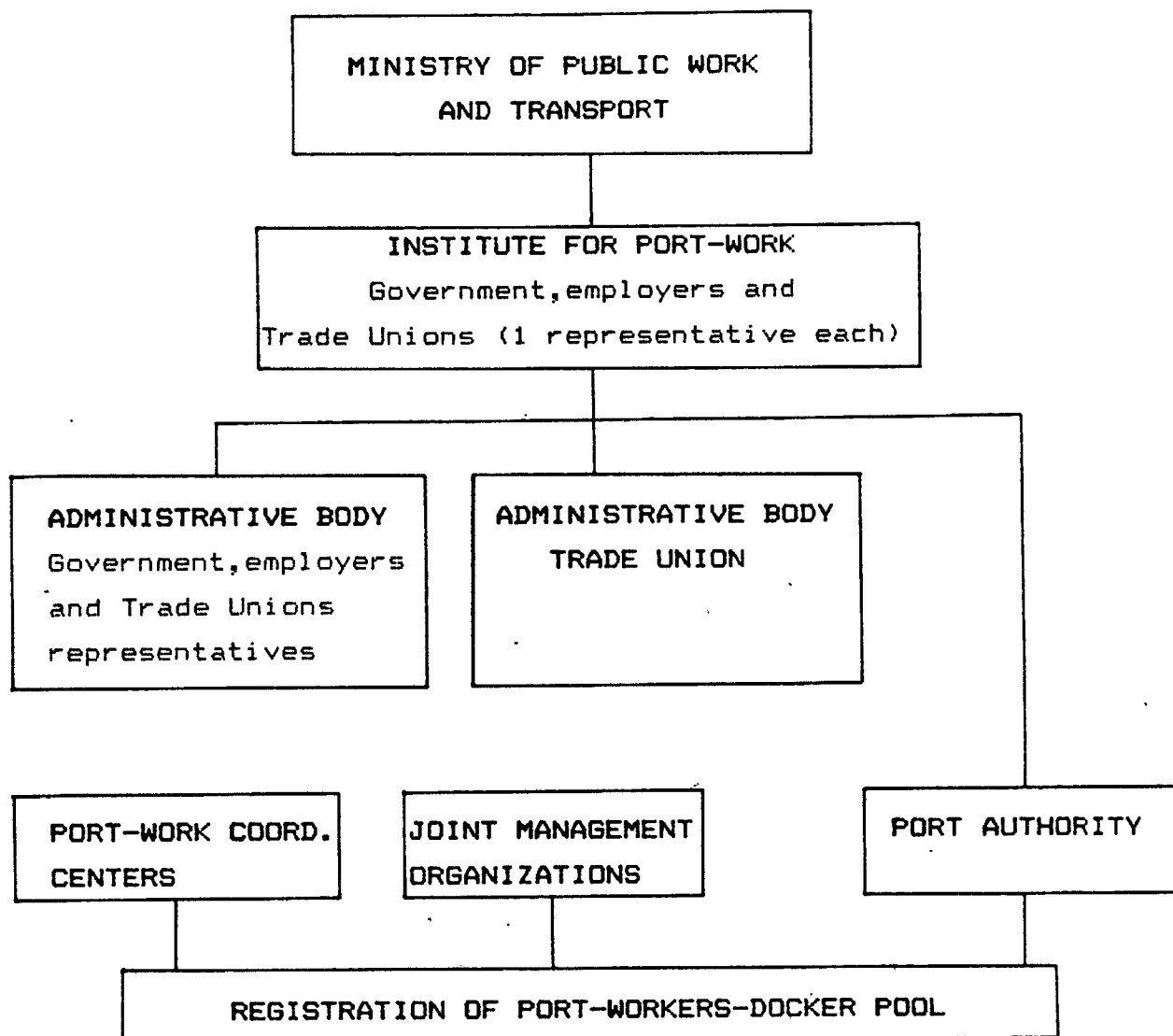


Chart 1

Port operators may employ permanent personnel from the docker pool with whom they conclude individual work contracts. Any other workers needed are obtained from the pool. Pool workers have a guaranteed salary equivalent to 75% of the basic monthly salary laid down by a collective agreement for each category. A Salary Guarantee Fund was set up for this purpose.

Salaries are fixed by collective bargaining between the trade unions and port operators. Once the salary scale is fixed, the coordinating centers and joint management

organizations calculate the rates charged to operators seeking workers from the pool according to the basic average salary for the period each docker works multiplied by a factor to cover social costs, surplus staff, administrative costs of personnel management, etc.

6.6 Docker Training

Docker training is the responsibility of the Institute for Port-work. However there is no specific training institution or training courses running on permanent basis.

For practice the port administrations and autonomous port boards provide training for their staff themselves or in conjunction with each other. Obviously this is an area in extreme need of improvement.

6.7 Main Problems of the Portuguese Ports

Although figures related to the productivity and efficiency of the Portuguese ports and their comparison with other foreign ports are not available, it is normally assumed by port users and other entities related with ports that Lisbon and Leixoes can be labeled as expensive and low productivity ports.

As far as productivity is concerned, a study of comparisons with some European ports (3) during the period of May/76 to April/77, relative to tonnage load/hour, gave the following information:

- . ANTWERP - 28
- . HAMBURG - 22
- . BREMEN - 20
- . ROTTERDAM - 19
- . LIVERPOOL - 14
- . LONDON - 10
- . LISBON - 8 / 9

In comparison the port of Lisbon with some of these ports

according to the "ratio" -the total volume of traffic/existing docker pool-, the conclusion was that the productivity of Lisbon's port was 2 to 3 times less than that of the most representative European ports.

The main problem of the ports of Lisbon and Leixoes is overmanning. According to calculations (4) for a total of 1,850 port-workers in the docker pool of Lisbon only 40% to 45% are actually utilized which means that labour force would have to be halved to reduce costs to a competitive level.

In Leixoes the excessive labour force is considered to be about 30% .

Two of the most important duties of the Port-workers Coordinating Centers are:

- . To adjust the docker pool to the real needs of port's labour force.
- . To elaborate technical analysis of work performed in ports taking into consideration the work and experience of other national and foreign ports with similar features, and the technological development of maritime transport and port equipment.

Such tasks, however, have not been completely done so far.

To tackle this problem the Government has recently introduced two important measures:

- . To remove the burden of organizing the workforce from the port authorities, especially in Lisbon and Leixoes.
- . To implement a complete revision of tariffs in order to reduce charges and modernize the system in the ports of Lisbon and Leixoes.

Nevertheless, experts maintain that the problem for the ports lay in productivity rather than excessive port fees.

Finally it is important to point out that the

Administration of the ports of Lisbon and Leixoes have to pay for investments of infrastructure and the other ports do not, which means that those two ports have to pass these costs to the port users facing a situation of distorted competition conditions with other national ports.

7. SHIPPING POLICY

7.1 Introduction

The Revolution of 25 April 1974 established a complete rupture with the old regime in all its economic, political and social aspects, with obvious consequences for the country's trade and shipping; mainly:

- a) The independence of the ex-colonies and consequently the end of an extensive market protected under cargo reservation
- b) The nationalization of the main shipping companies (CNN, CTM and SOPONATA) to a level amounting to 99% of the total fleet.
- c) The increase of social conditions of Portuguese seafarers, mainly salaries, far beyond what companies could bear
- d) "Heritage" of an old fleet, and a ship management used to operate under monopolistic conditions and as a result incapable of reacting effectively to a new situation of severe international competition.
- e) Political and social instability during the 1970's which obviously created an adverse environment for investment in shipping.

Moreover those consequences were followed by a lack of a shipping strategy in order to face the challenge of the new situation, the formulation of an adequate maritime policy and the excessive intervention of the State, both regulatory and managerial, created doom conditions for the shipping industry.

7.2 The present situation and future trends

To promote the shipping industry the Government is preparing the implementation of the following measures:

- . organization of the market
- . support to the investment
- . improvement of competitiveness of the fleet

7.2.1 Organization of the market

In this context a new legislation has been introduced, involving the following areas:

- a) Access to and exercise of shipping activities
(Decree-Law No. 414/86 of 15 December)

Previously, shipowning was virtually a closed business which needed a special authorization granted on a case-by-case basis through a complex bureaucratic process. Since this new law was introduced, a company needs only to prove that it reaches the minimum equity standards and that it owns at least one ship, to get automatic approval.

- b) Access to chartering activities (Decree-Law No.422/86 and Governmental Order No.760/86 of 23 December)

Before this legislation came into force, long-term chartering was seen as an extension of shipowning and was limited to registered owners.

Voyage chartering was the province of ship agents.

All those deals needed Government authorization.

The statute has liberalized the chartering framework now, so that the Government does not intervene unless illegal activities are suspected.

According to the new regulations cargo owners are allowed to book foreign flag tonnage for 25% of their imports.

Finally, a principle has been established under which in case of existence of lines subjected to public services which must practice freight rates below a ship's operational costs, the differential will be supported by the State.

7.2.2 Incentives to Investment

There are two laws being prepared: one related with sale and purchase of ships and another referring to incentives to owners to scrap and acquire new tonnage.

As far as sale and purchase are concerned at present Government reviews each transaction on case-by-case basis, a process which makes it almost impossible for an owner to play the market.

The new law acknowledges the principle of freedom to acquire ships, both new buildings and second hand, as well as the freedom to alienate them.

Relative to the incentives referred to, an amount of one million dollars has already been allocated to a fleet renewal programme, mainly for general cargo ships.

7.2.3 Measures to improve competitiveness of the fleet

The Government is preparing a new legislation relative to manning aiming to:

- . simplify the process of fixing the ship's manning
- . ascribe shipowners greater initiative and responsibility in the process
- . make clear that the manning scales established are minimum safety manning scales
- . abolish the system of previous authorization for the shipowner to embark additional crew
- . reduce the shipowner's charges relative to the sea training of cadets on board ships
- . revise the Seamen's Act
- . revise the juridical requirement regime of the work contract on board ships

It is important to stress that during the past ten years, Portugal have had a shipping policy of preference for domestic flag vessels. In fact the Decree-Law No.75 - U/77 of 28 February and Law No 49/77 of 20 July laid down cargo reservations for all imports and some exports. The Decree-Law No.34/87 of 20 January and Governmental Order No.279/87 and

287/B7 of 7 April although reducing the amount of "strategic imports" affected by national flag preference to 75% and removing all protection on exports, expands protection to time chartered vessels, which the EEC is considering to be incompatible with the existing principles and regulations on the subject.

In fact Article 2 of Council Regulation (EEC) No.4055/86 of 22 December 1986 sets up: "...unilateral national restrictions in existence before 1 July 1986 on the carriage of certain goods wholly or partly reserved for vessels flying the national flag, shall be phased out at the latest in accordance with the following timetable:

- carriage between Member States by vessels flying the flag of a Member State: 31 December 1989
- carriage between Member States and third countries by vessels flying the flag of a Member State: 31 December 1991
- carriage between Member States and between Member States and third countries in other vessels: 1 January 1993

As far as cabotage is concerned although reservation of cargo is still allowed it has been foreseen that sooner or later it will also be abolished.

Then the Portuguese merchant fleet has no other choice but to face fleet competition from the EEC in a market completely liberalized within five years. Consequently it is a must to prepare the necessary conditions to meet the challenge.

8.- MARITIME ADMINISTRATION

8.1 Introduction

As it is pointed out by Professor Vanchiswar (5) the object of a Maritime Administration Organization within the framework of a country's overall maritime activities is to provide the Government with the machinery which would enable it

to satisfactorily and efficiently undertake those functions which are embodied within the Country's Merchant Shipping Legislation.

In pursuing its activities in the development of the maritime field, the appropriate Government Authorities would, therefore, need to have an efficient administrative machinery to advise them on the adoption and implementation of the national legislation and other regulations required for developing and operating the maritime programme of the country and for discharging the obligation of the Government under International Convention which may be applicable.

An efficient organization is the one which is able to organize and to make an optimum use of resources available to achieve objectives and results previously determined, as shown in the following chart.

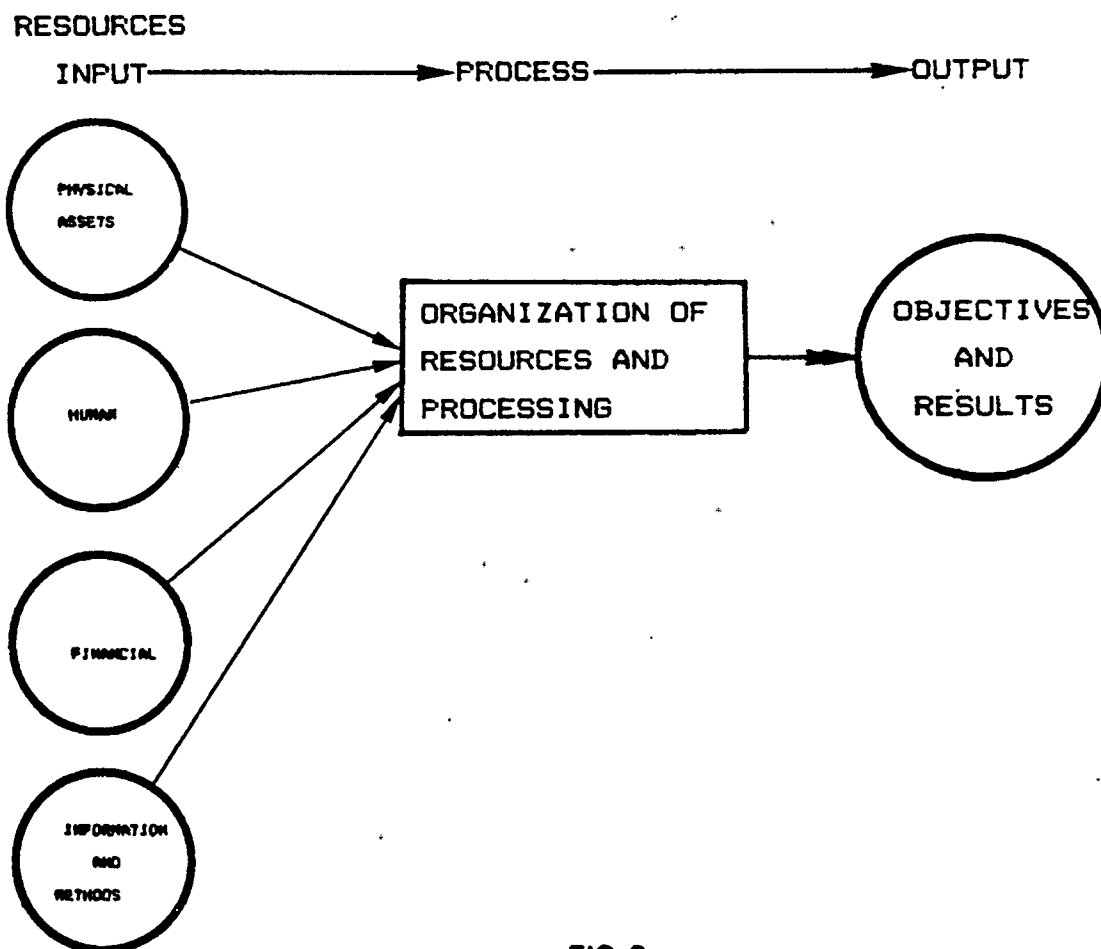


FIG 2

8.2 Organization and main functions

The organization and main functions of the Portuguese Maritime Administration can be summarized as follows:

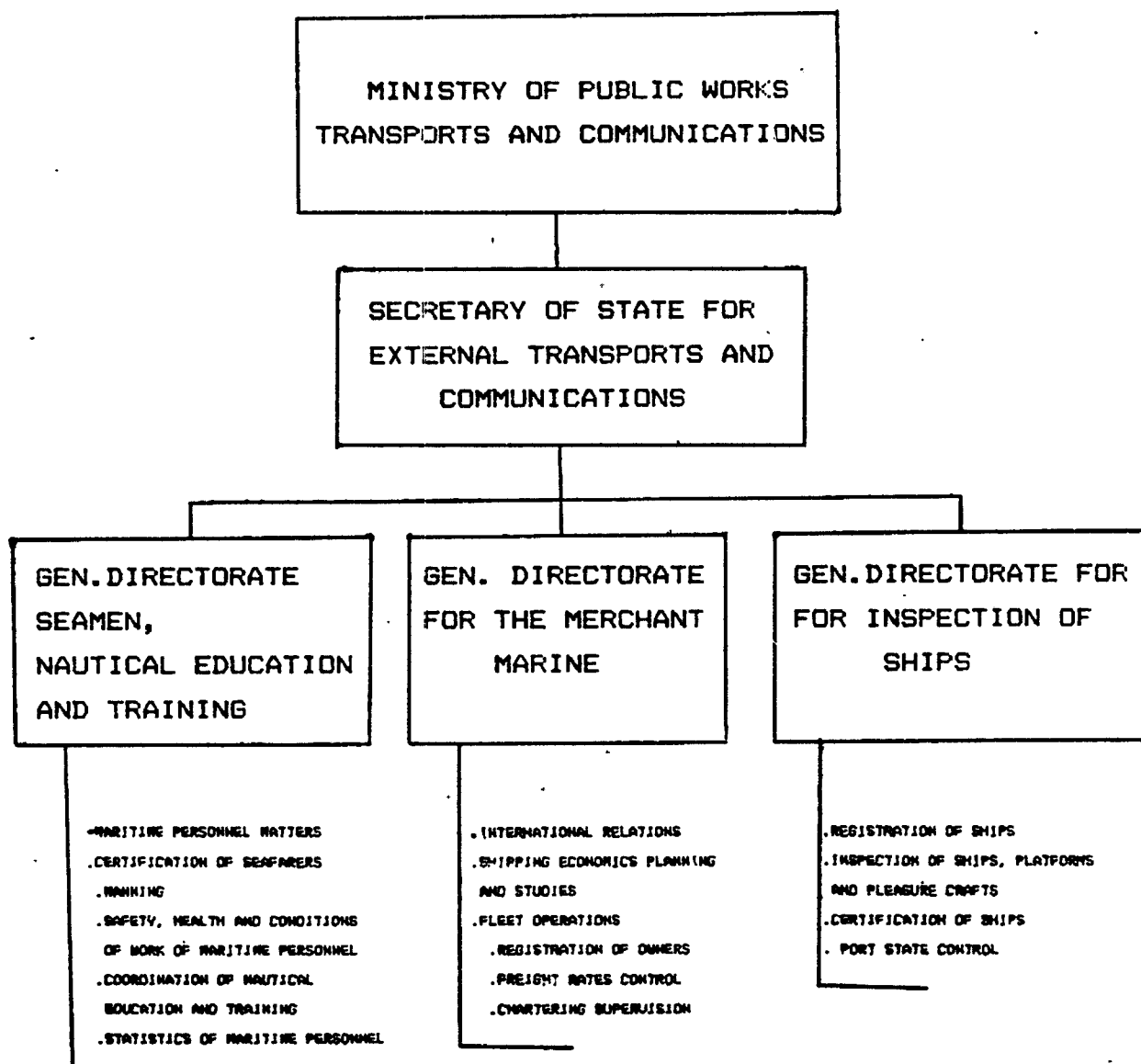
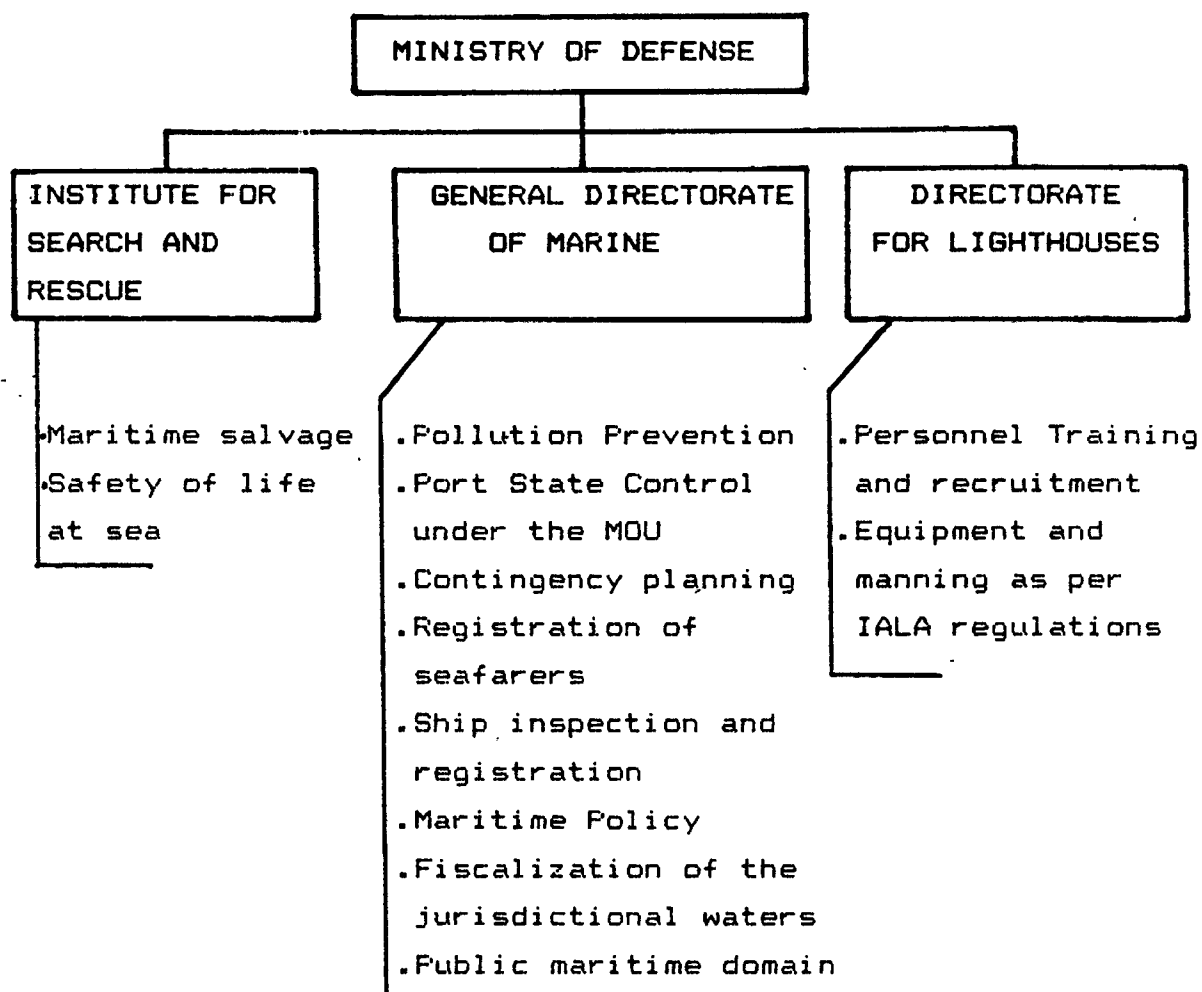


Chart 2

Other important functions are carried out by agencies under different Ministries such as:



Ministry of Foreign Affairs: Relationship with IMO matters
through the National Commission
for IMO

Ministry of Work: . Relationship with ILO
 . Relations and conditions of work
 . Collective bargaining and agreements
 . Disputes on collective work agreements
 |questions

Ministry of Industry: Shipbuilding and ship-repair industries

Ministry of Agriculture: Fishing fleet. Nautical education and professional training of fishermen

8.3 Basic Problems

The main problem areas of the Portuguese maritime administration are the following:

- (i) inadequate infrastructure as regards resources, organization and functions
- (ii) out - dated maritime legislation

8.3.1 Infrastructure

As can be deducted from point 8.2 the maritime functions are scattered by different Ministries. There are two consequences from this situation: one less important result is the need for active communication and efficient coordination of the desegregated areas. This is the case of the functions related to maritime matters carried out by the Ministries of Foreign Affairs, Work, Industry and Agriculture.

The other result is much more important because it involves overlapping of areas of responsibility and consequently leading to conflicts of competence, bottlenecks and inefficiency as is the case of the maritime functions

carried out by Departments of the Ministry of Public Works, Transports and Communications and the ones carried out by departments under the Ministry of Defense (General Directorate of Marine) examples: safety, inspection of ships, Maritime personnel matters.

This situation needs to be clarified through a redistribution of functions and responsibilities in the context of the reformulation and modernization of the whole Maritime Administration (MA) as recommended in Chapter V.

In some cases the described situation is due to an important lacuna : the inexistence of Regional Departments of the Secretary of State for External Transports and Communications (SETEC) which in practice is depending upon DGM -Captaincies of the Ports - to fulfill its executive functions.

Deficient installation conditions and lack of modern equipment such as electronic data processors (EDP systems) are the main handicaps of the SETEC Departments as far as physical resources is concerned.

There is a shortage of personnel with the profile required to properly fulfill the technical tasks of the Maritime Administration. This personnel should have both an adequate technical/professional and academic background.

Other important deficiencies of the Maritime Administration can be summarized as follows:

- . lack of organized structures for research on shipping
- . lack of training actions oriented to specific expertise needs
- . lack of adequate structures involved in the evolution of the international maritime matters and the consequential problem of having to deal with them in isolation.

8.3.2 Out-dated Maritime Legislation

One of the features of the Portuguese Maritime Administration is that it has static organic laws i.e. the laws establishing the attributions, competencies and responsibilities of the General Directorates tend to remain for many years without adjustment to the economic and social evolution of its environment.

This is particularly important in the Maritime sector considering that shipping is one of the most dynamic activities.

As a result Portuguese Maritime Administration is normally facing the problem of breaking off its functions with the real needs of the maritime sector.

The same happens with the basic regulatory legislation such as:

- . Regulation of Seafarers' Registration, Enrollment and Manning
- . Juridical Regime of the Contract of work on board ships
- . Penal and Disciplinary Code of the Merchant Marine
- . Title III of the Portuguese Commercial Code
- . General Regulation of the Captaincies of the Ports

FOOTNOTES AND REFERENCES

- 1.- Includes basic wages, overtime, leave pay, social security contribution, retirement provisions, crew rotation, travel and victualing.
- 2.- Although information is not available for Denmark and Greece, we have indicators that both seafarers contribution and shipowners contribution are smaller than those of the Portuguese.
- 3.- Domingos Ferreira, Some Notes on National Ports; paper presented in a Symposium organized by the Portuguese Master's Union, Lisbon, May 1986.
- 4.- Al. Cruz Junior, Transporte Maritimo: Aspectos Globais Consideracoes Estrategicas e de Seguranca; paper presented in a Symposium organized by the Portuguese Master's Union, Lisbon, May 1986.
- 5.- Professor P. S. Vanchiswar, Handouts to General Maritime .-1987 course.

CHAPTER III

MAIN PROSPECTS OF THE SHIPPING INDUSTRY FOR THE 1990s WITH IMPACT IN PORTUGAL

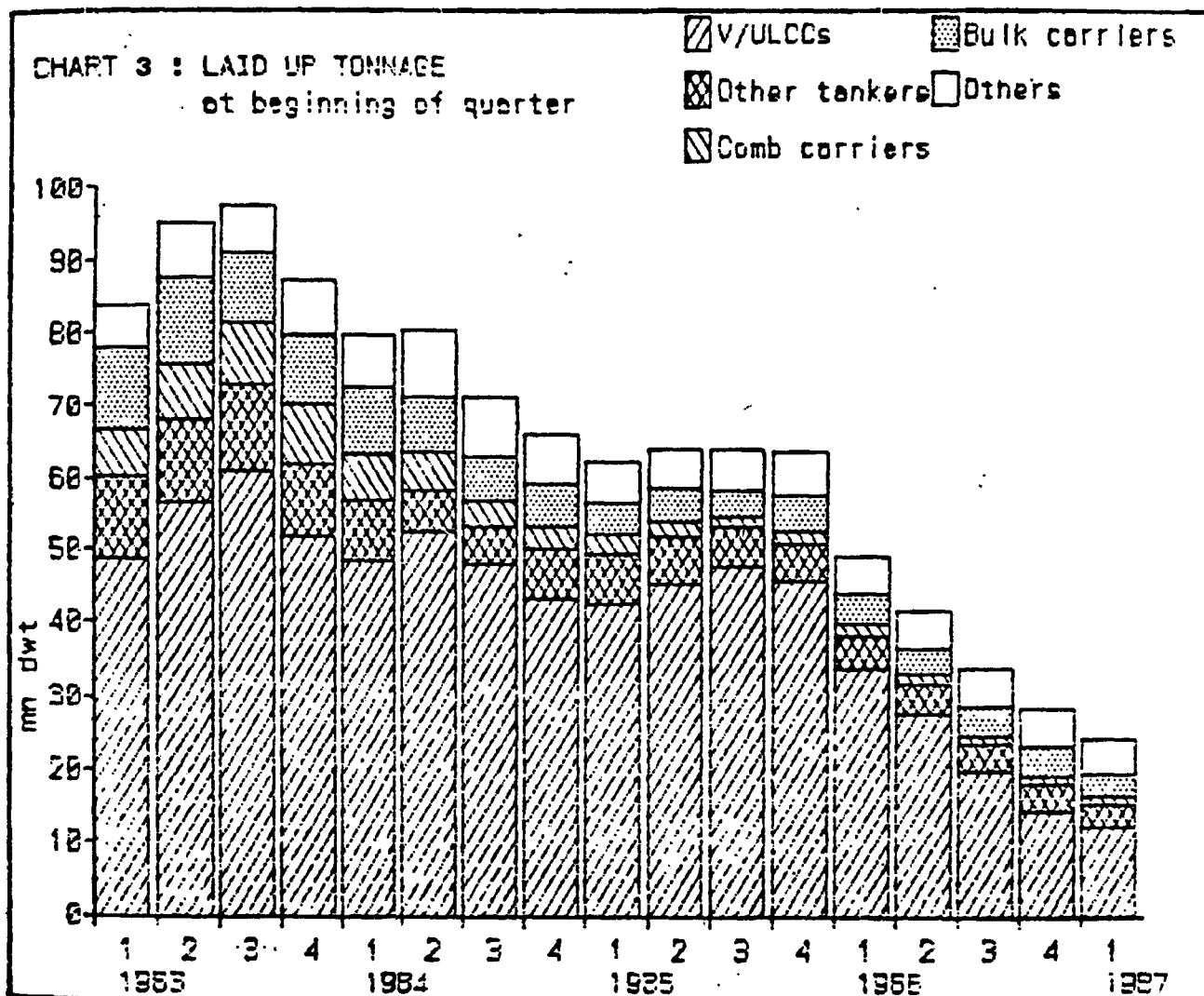
1.- GENERAL

For the near future, the maritime transport will continue to be directly affected by over-tonnage, as can be deducted from Chart 1.

In fact from 1983 to 1987 laid up tonnage, although tending to reduce is still significant: 15 million dwt. of tankers; 20 million dwt. of bulk carriers and about 25 million dwt. of other ships.

Shipping markets have been destroyed particularly during the last five years (1982 - 1987) mainly due to shipowners inability to resist the temptation of subsidized shipyard credits and easy bank loan facilities. For example during the period of 1980 - 1983 while seaborne trade decreased by 24% the world merchant fleet increased by 1%.

This imbalance between the supply and demand will have natural repercussions on the freight market, contributing to the maintenance of the present crisis. Other factors such as the evolution of dollar depreciation, technological changes, implying that ships rapidly become obsolete, the general organization of liner markets, the tendencies towards flagging out and off-shore flags, the activities of consortia, new services around the world dominated by powerful groups like Evergreen and, finally, the new concept of the intermodal integrated transport system including complementary system such as inland transport, port services, container services, etc., will tend to increase



SOURCE: BASED ON DATA OBTAINED FROM GENERAL
DIRECTORATE FOR MERCHANT MARINE

productivity gains and economies of scale giving less and less room to small groups/shipowners and will push off non-competitive fleets.

According to Professor Arnljot Stromme Svendsen (1) the human motives and main causes for a continuation of excessive shipbuilding capacity and tonnage surplus can be summarized as follows:

- . Optimism, expectations
- . Tyranny of status-quo attitude from union leaders, politicians, managers, etc.
- . Subsidies, public aids
- . Tax reliefs
- . Soft bank credits, over-generous finance

It is clear that maritime transport will continue to have a major role to play in the future.

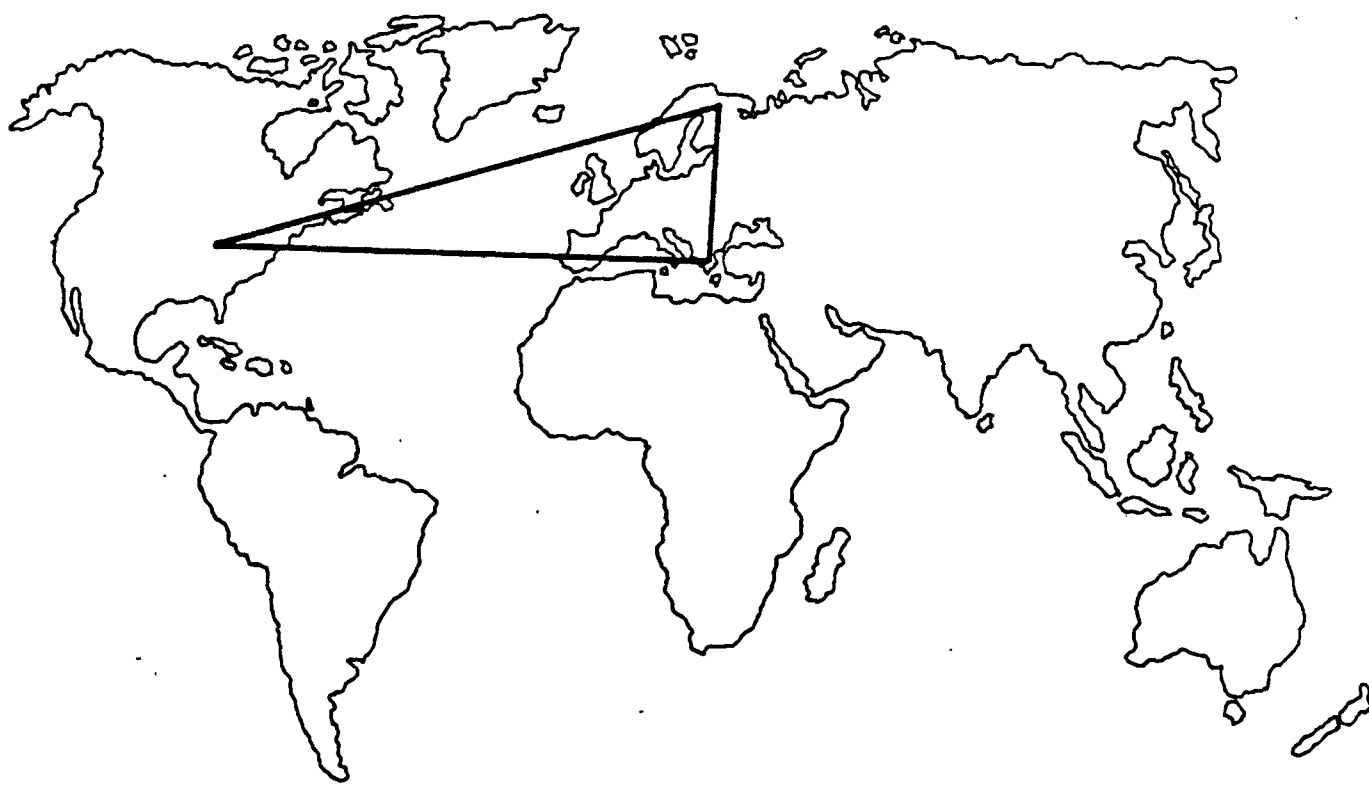
In fact the present total world population of about 4.25 billion will be about 6 billion by year 2000. This will generate an enormous demand for food, energy, manufactured goods, etc. Various forecasts estimate that by the year 2000 the total volume of cargo to be handled in the international seaborne trade will be about 10,000 million tonnes which represents an increase of about 100% compared with the current volume.

By logic the present world fleet capacity should be almost doubled by the year 2000 to meet the requirements of the world trade.

However, a shift of the center of the world, clockwise towards a developing triangle with the angles in South Korea, China, Australia and the Middle East and with the center in South East Asia, has become more and more apparent (2).

This is going to affect global shipping, considering that the most market development will take place in that triangle in which two thirds of the world's population live, one billion of whom in China.

TRADITIONAL SHIPPING WORLD



NEW SHIPPING WORLD

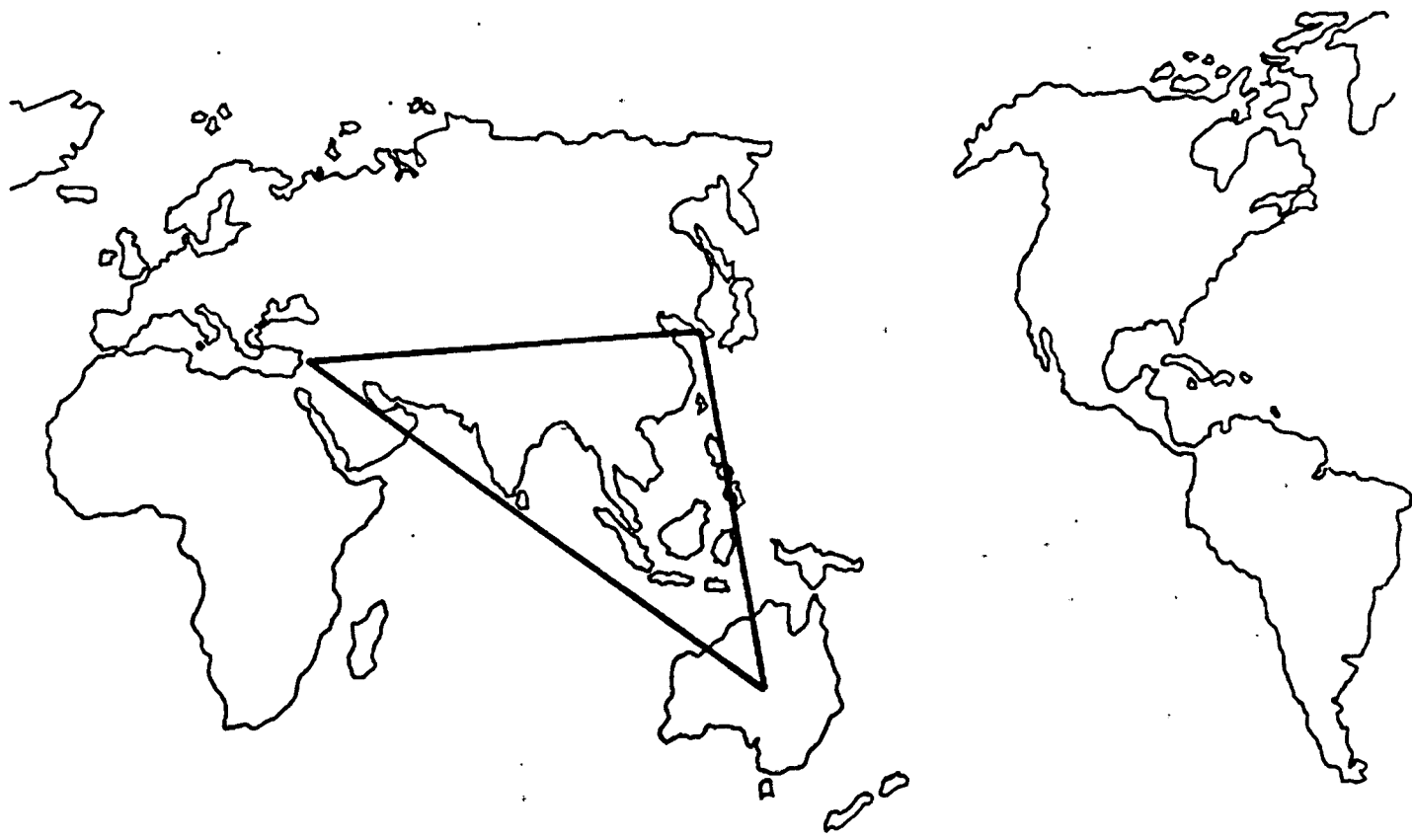


FIG. 3

Meanwhile the shipping industry continues to be in prolonged recession merged in depressed freight rates and increasing levels of lay-ups.

As pointed out by D. Stonebridge (3) "... the industry is increasingly taking on the image of a vast casino with many losers and very few winners".

The trend for a slight demand for tonnage tend to to be profited by low-wage countries while European shipowners will face more and more difficulties to run profitable shipping operations mainly due to higher costs of its crews, as shown in Table XVII.

TABLE XVII
COSTS OF A 2400 TEU CONTAINER SHIP

(46000 DWT) 1982				
ANNUAL COSTS IN US\$ 000				
COSTS	FED. REP. GERMANY	U.K.	GREECE	FOC
CREW	1595	1100	965	623
R & M	656	656	656	722
INSURANCE	825	825	867	867
OVERHEAD	150	150	150	150
	4431	2731	2638	2362
CAPITAL	9375	9375	9375	9375
FUEL	8720	8720	8720	8720
TOTAL	22526	20826	20733	20457

Source: "Crew Costs", DMDREBY, in Maritime Policy and Management, Vol.12 No.1 January - March 1985, UWIST.

This Table shows that while other costs remain equivalent, crew costs vary significantly from European flags to flags of convenience amounting to: +156% in the case of Federal Republic of Germany; +76.6% in the case of U.K.

and +54.9% in the case of Greece.

Then apparently shipowners could not find other solutions in order to compete but to flag out as shown in Figure 4.

The most dramatic case, however is Norway where about 5% of its fleet flagged out to foreign flags in 1984 while about 71.4% of its fleet flagged out in 1987. (An increase of more than 14 times in 3 years).

The impact of this situation in the Norwegian shipping environment was so great that the Government decided to draw up a new legislation in order to create a Norwegian International Shipping Register (NIS) which was implemented on July 1 of this year.

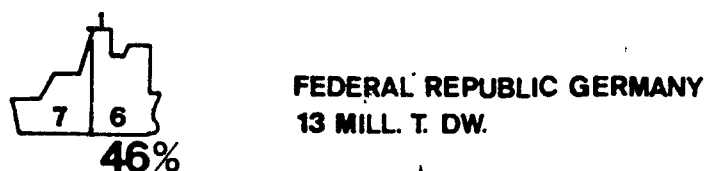
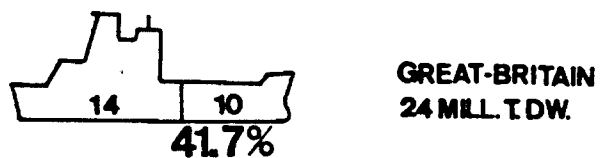
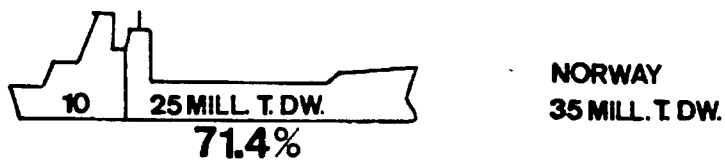
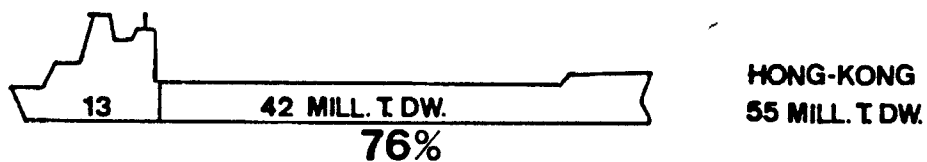
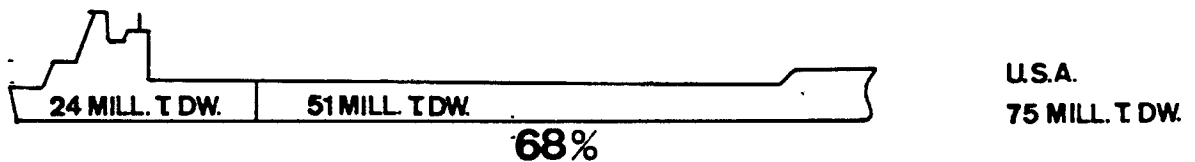
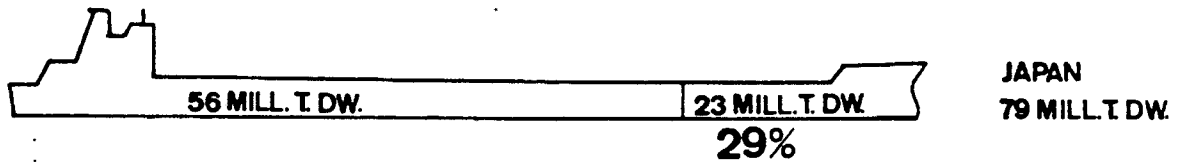
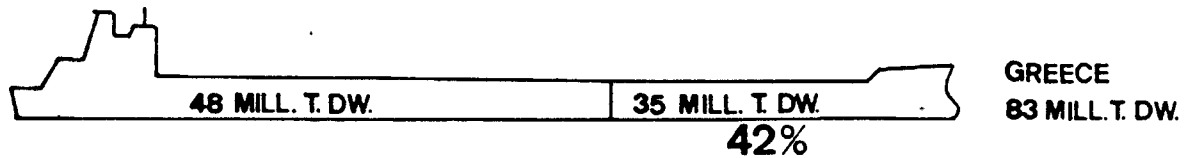
The new register is designed to attract tonnage from Norwegian and non-Norwegian owners through a large scale of liberalization of the country's existing rules and regulations, creating a substantially sized Norwegian flagged fleet.

The key elements offered by the NIS are:

- . competitive registration fees
- . freedom from Norwegian taxation for foreign owners
- . no nationality requirements for equity capital
- . a professional maritime administration
- . effective enforcement of technical rules and regulations, based on internationally agreed standards.
- . a world-wide foreign service at the disposal of vessels and seamen
- . flexible nationality requirement for manning
- . exemption from Norwegian income tax for non-Nordic seafarers with earnings below NOK 6 000 (USD 900) per month
- . the ability to conclude collective wage agreements with both Norwegian and other bona-fide unions

OWN FLAG

CONTROLLED UNDER OTHER FLAGS



SOURCE: NORWEGIAN SHIPOWNERS
ASSOCIATION, APRIL 1987

FIG. 4

Similar experiments are being made by other European maritime countries like Great Britain with an off-shore registry in the Isle of Man, France in Kerguelen Island, Spain in Canarian Islands, etc.

It is still too early to foresee the success of such solutions, but its expansion to other high cost flags should be expected at a rate in correlation with the success of these pioneer experiments.

Specific trades will tend to increase in the future and consequently a greater need for specialized tonnage is expected.

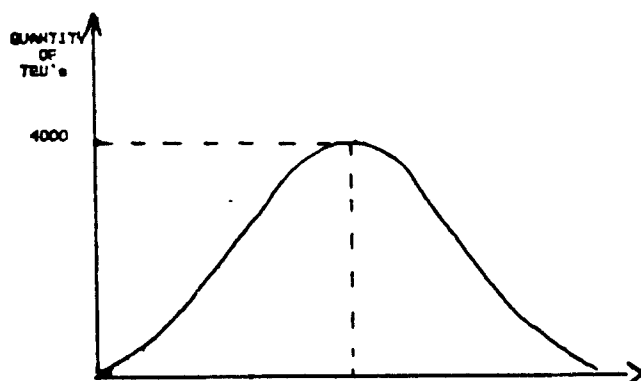
Economies of scale, unitization of cargo and increases in vessel speed which were the corner stones of productivity gains in the 1960s and early 1970s are less likely to be major factors in productivity gains for the 1990s, considering that developing countries will tend to export more semi-finished products instead of raw materials.

In this context, smaller and highly specialized bulk carriers will have higher probability of success.

As far as conventional ship types are concerned the tendency will be to adjust the ships and ship operating logistic in order to optimize the utilization of the largest vessels which will call the main ports separated by large distances, leaving to smaller feeder vessels the role of connecting minor ports, river ports or outports with major terminals. The objective is to optimize the sea link in the context of an integrated chain of the total transportation system.

Containerization and unitized cargo-handling methods are expected to penetrate further the break-bulk cargo sector and to reach a level of 70/80% by 1990.

Deep-sea container will continue to benefit from economies of scale although a shipping analyst (4) considered that the optimum will be reached with capacities of 4,000 TEU



Economies of scale for containers

Average overall trading distances are expected to decline, with an important impact on shipping, due to the following main factors: (i) use of pipelines, improved waterways and canals; (ii) the locating of processing plants at or near a source of raw material; (iii) rationalization in shipping, e.g. transshipment, land bridge system, etc.

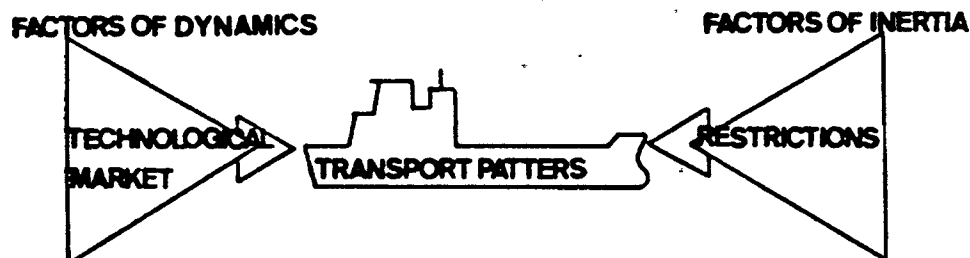
With regard to tankers the main trend is the reduction in size of ULCC's and shorter voyage length.

2. SHIPS AND SHIP OPERATION

The development of the transport pattern in shipping is the result of factors of dynamic and factors of inertia acting as shown in Fig. 5.

The main factors of dynamic are: technical factors such as material, design, automation, computers and communication; and market factors such as: cargo/trade, costs, competitors, existing fleet.

The main factors of inertia are: safety, social demands and political aspects.



FACTORS INFLUENCING THE DEVELOPMENT OF THE TRANSPORT PATTERN

FIG. 5

Considering that it is technically possible to reduce the actual fuel consumption of vessels by up to 50%, developments in marine engineering will be expected to achieve this objective as quickly as imposed by the evolution of bunker prices.

Improved fuel-saving engines will gain acceptance combined with improved operational procedures to conserve energy.

Advanced automation equipment will be utilized more extensively on board. This also applies to cargo-handling, mooring, maintenance, maneuvering, etc. Microelectronics will significantly influence the instrumentation and monitoring functions on board. This applies to both surveillance and control system.

In this context it is foreseen that the following development factors will represent a major concern of the shipping industry in the future:

- . conversion to technologically advanced ships
- . energy considerations (bunker prices)
- . introduction of maritime satellite communications and its impact on ship management.

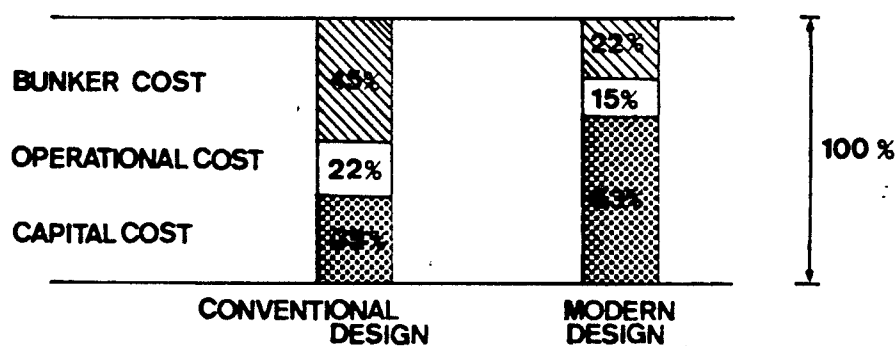
To survive in the shipping business European countries have no other choice than to compensate their higher crew costs with other comparative advantage factors, such as: greater operating efficiency, improved safety and reliability; less energy consumption, improved marketing and improved service.

These goals can be achieved through the following means:

- . use of materials with maintenance-reducing effect
- . increased use of automatization
- . increased efficiency in cargo handling and storage
- . developed systems to optimize fuel economy
- . reductioning the level of manual operations through investment in labour-saving aids

- . introduction of efficient and more human oriented methods in organization of work and job satisfaction
- . adjust the communication process to the modern needs of ship-shore interface
- . upgrading the management functions at the shipping office through increased use of system analysis and modern planning techniques, use of electronic data-processing (EDP) as a management tool, etc.

Bunker costs is a major factor of the total operating costs of a conventional ship. However a new generation of fuel-economic ships is now emerging substantially changing the conventional structure of costs. (Fig. 6)



SOURCE: - A. SAGAN, 'Ship Operations of the Future'
PAPER 5 - Euroship 84, pag. 18 - The
Institute of Marine Engineers

FIG. 6

Greater potential for energy savings still exists in areas such as:

- . hull care
- . optimized docking
- . optimized trim
- . weather routing/satellite navigation
- . voyage optimization (speed versus TC rates)

- . tonnage utilization
- . more efficient propulsion system

Sohmen (5) pointed out that additional savings can be achieved in manning and maintenance costs as follows:

In order to save manning costs:

- . use of larger vessels
- . increase automation (unmanned engine room spaces, comprehensive navigation controls, automatic mooring systems)
- . equipment designed to allow planned maintenance (e.g. diagnostic systems)
- . improvements in plant reliability (e.g. high-precision sensors, new alloys, ceramics)
- . structure and equipment design and technology to facilitate small all-purpose crew arrangements

In order to save maintenance costs:

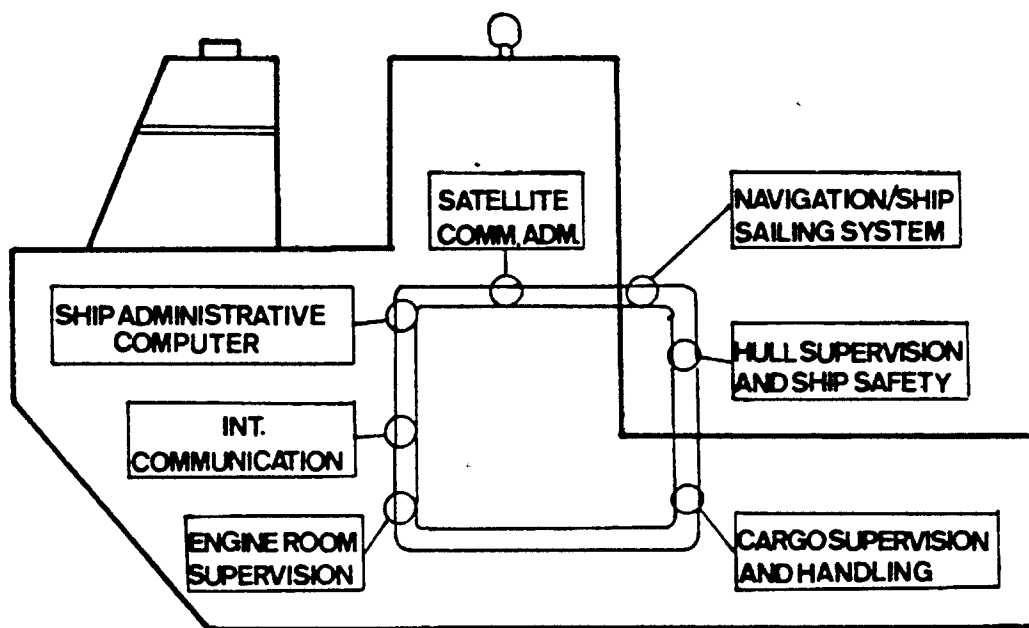
- . better hull coatings/paint systems
- . new hull forms and propeller designs
- . better tank coatings/ hold paints
- . cathodic protection
- . longer docking intervals (underwater surveys, paint-afloat techniques)
- . new hatch cover design and pumping systems

Although cost/efficiency of automation should accurately be evaluated in the case of countries such as Portugal, it is a fact that it has been developed and it is expected to increase in the future.

We are now beginning a "third automation generation" where the automation become an integrated part of the ship's operational functions and consequently an adequate system of seafarer's education, training and manning is required. The development of maritime satellite communication systems enabling data transmissions between the ship and shore will

be of great importance, and transferred with a high degree of effectiveness.

The impact of computerization in ship operations and management will be of tremendous effect leading to new concepts of safety and again a new role for seafaring personnel. Figure 7 shows the layout of an advanced automation plant based upon a distributed ship computer system.



DISTRIBUTED SHIP COMPUTER SYSTEM
SOURCE: A. SAGAN OP.CIT.

FIG. 7

The most important development for shipping is probably microelectronics. Navigational equipment, control systems, information, systems, calculators, electronic office machines and of course communications will undoubtedly have a major impact on the way ships are operated in the future.

In this context the VDU concept of control already fitted into certain classes of aircraft, will surely be fitted into a ship bridge with satellite terminals around the ship. This will change the concept of watchkeeping and will necessitate all deck officers having a fuller understanding of engineering. Clearly, if the engineer is going to stand watch, he will need to be trained in navigation.

As crew sizes diminish, robotic solution to problems such as hatch cleaning will evolve.

Finally the flexibility and accuracy of data handling and transmission will result in a host of new systems on board and ashore. At present the main thrust is to devolve responsibility to the ship and reduce crew members; the next phase will be to redeploy certain control information back ashore and reduce crew members still further.

Such a system will have a strong influence on cost reducing measures such as:

- . optimization of route (speed/rate)
- . navigational improvements (routing, steering control, etc.)
- . optimization of trim and propulsion factors (g/ihp, t/n.m)
- . supervision of hull roughness
- . optimization of docking procedures (purchase, quality, storage, treatment)
- . optimized cargo treatment
- . improved equipment for condition supervision
- . improved routines for maintenance and spare parts

In the future the trend is for the existence of two separate groups of ships:

- .- A group of ships of high cost, high efficiency, low energy consumption and effective advanced ship operation

.- A group of traditional vessels with traditional operating and management patterns.

The first group will tend to increase quickly under the impulse of the developed maritime nations
The second will tend to decrease slowly under sustaining conditions of the less developed countries.

Ship operations of the future will be the result of the development of products and consequent development of resources: human, technical, organizative, systems and capital through a process involving the analysis of present resources, and strategic coupling of present ideas with the development of future ideas as shown in Figure 8.

3. DEVELOPMENT TREND IN SHIP MANAGEMENT

First of all it is important to underline that ship management is largely influenced by the type of ship and its equipment which also determines the number and quality of crew.

The development trend in ship management is being oriented into three directions: on board, ashore and mixed systems.

On board through management of condition-monitoring and maintenance activities, use of work-saving technology and use of advanced instrumentation and monitoring media (i.e. satellite communication, microprocessors, etc.)

Ashore the most important trends to be expected are: an increased use of data-based tools at the offices and introduction of new maritime communication services (24-hour telex/teletex, data transfer, facsimile, etc.) between ships and shipping offices.

An increasing use of EDP systems will improve administration of functions such as: accounting, chartering,

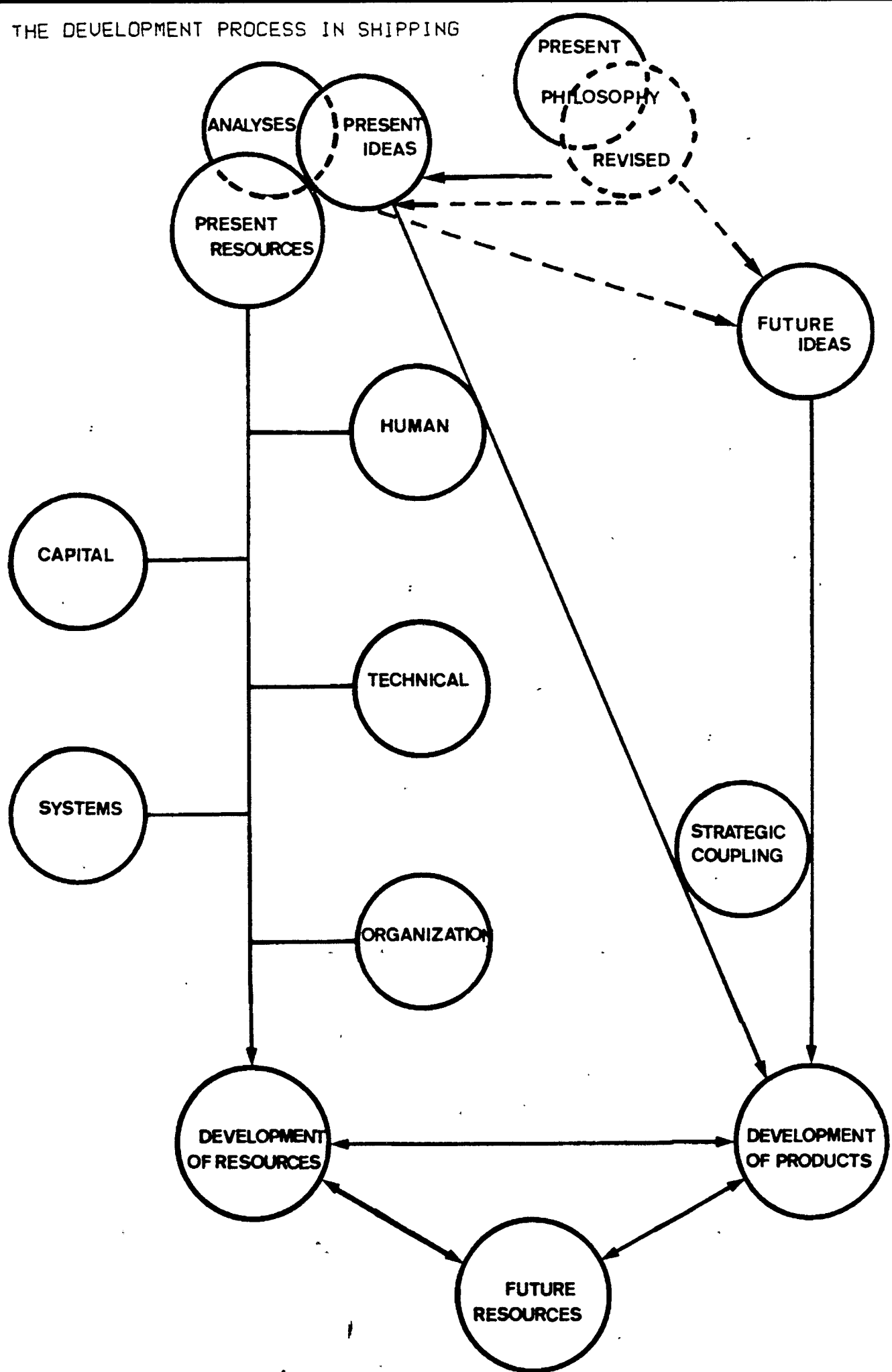


FIG. 8

purchasing routines, budgeting and follow-up procedures, etc.

The conjugated development of those two trends will tend to strengthen the role of shipboard management, taking advantage of telematic, to delegate management functions to a crew management team: such as planned maintenance, stores, spares, bunkering, safety, cargo, etc. . The objective is to increase rationalization and productivity of human resources.

It will imply advanced work organization schemes on board, adequate training and closer relationship ship/shore activities.

As a consequence job satisfaction, job enrichment and career patterns for the sailing personnel are expected to improve.

Obviously the success will depend on the access to effective and reasonably priced communications on public and maritime networks.

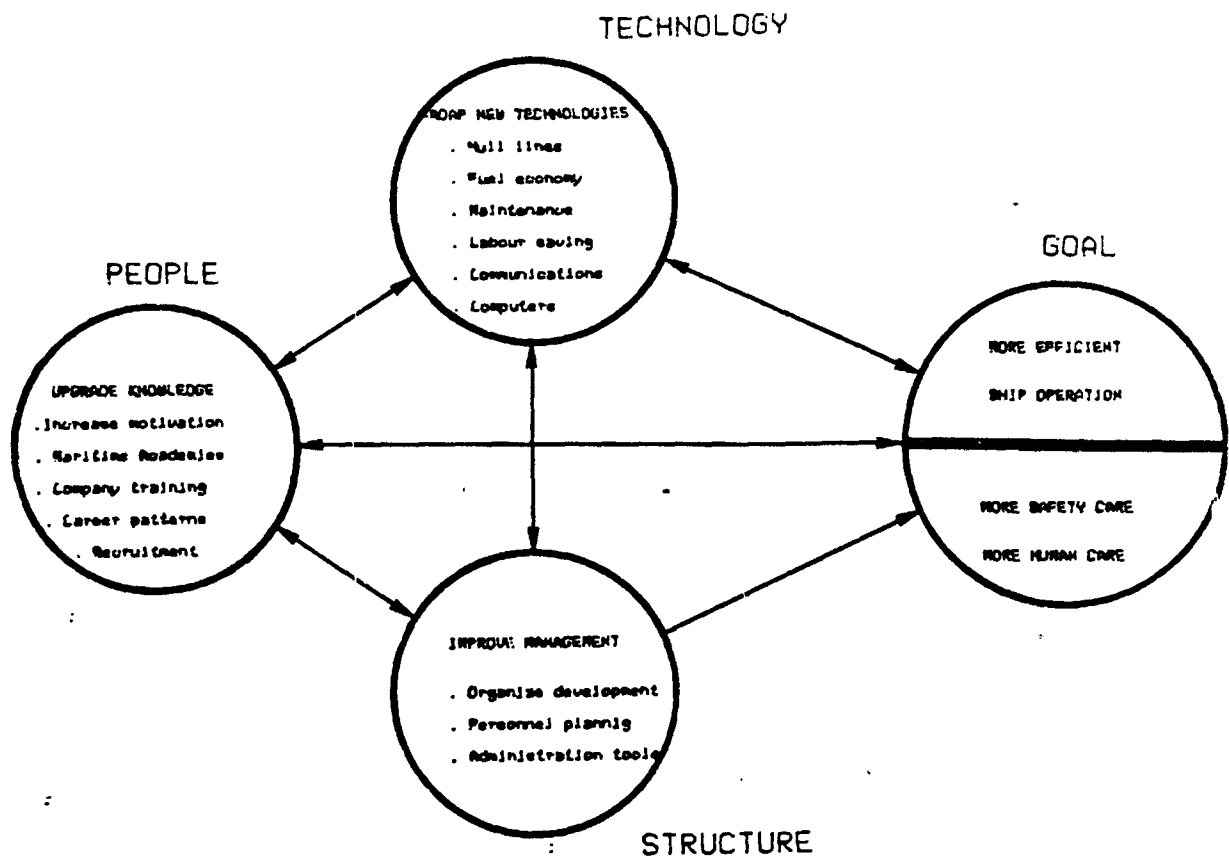
However, it is important to bear in mind that efficient shipping management must consider the specification of shipping industry in the sense that here technical, economical and social considerations are much more inter-related therefore a systematic approach is essential. Figure 9 shows the interactions between the goal of achieving more efficient ship operation, technology, people and structure.

The right combination of technology and people backed up an efficient management is the key to successful ship operation.

4.- PORTS

A modern European port is a complex of facilities such as general and specialized terminals for the handling and storage of dry and liquid cargoes and facilities for industrial development and services.

The port should be laid out and geared to give the quickest possible turn-round to the ships and sufficient land-space to store and dispatch the goods efficiently.



Interactions between more efficient ship operation/safety/human element and technology/people/structure

FIG. 9

For the design of these facilities, progresses of the quantity and type of cargo to be handled and the means of transport over a fairly long period (25 - 30 years) are necessary.

Progress for port development must include not only the flow of the different commodities but also the qualitative and quantitative changes in industrial production and obviously the number, size and types of ships to call the port in order to provide adequate facilities and services and to determine specific matters such as dimensions of works, depths at quay-walls, widths of basins, depths of entrance, channels, etc.

According to H.L. Beth (7) development of ports is subject to a dynamic interplay of challenges and responses as shown in the following chart.

CHALLENGES	RESPONSES
The increase in volume of seaborne trade and consequently the increase of demand for cargo to be handled	Quantitative (capital widening): docks, quays, berths, etc. additional new facilities Qualitative (capital deepening): rationalization, increase of productivity of existing facilities
The increasing average size of the vessels and consequently increase of volume of cargo	Qualitative (capital deepening): qualification of approach berth equipment Move to outer ports. Offshore structures
The development of new transportation systems including the combination of different kinds of maritime transport (container, lash, ro-ro, etc.)	New facilities: multipurpose, special facilities, terminals and consequent impact on hinterland transport and port administration documentation. Result: higher productivity in port performance but be aware of higher market risk in specialization and increase in capital intensity.
The development of new special trades	Building special terminals or facilities to cope with the needs of special trades. However a greater risk is involved considering that the possibility to handle such commodities is rather limited and consequently cost/benefit analysis should be previously carried out.
The changing requirements as to increase of speed and reduction of time in ports	Some overcapacity compared with conventional output, is necessary. As a result facilities for container transport have to be arranged for the largest demand expected, whilst facilities for conventional general cargo are calculated on the average requirement with an often well known risk of waiting time for ships during peak periods.
The organization of shipping and transport (which may force a port to become active)	Following criteria have to be taken into account: regularity of demand, direct calls or feeder systems (central or secondary function of the port); international transit functions; homogeneity of cargo breakdown, share of manufacturing in port; having free ports areas or not.
Fluctuation in demand of cargo handling	Reactions will depend on the response to the following questions: -Will port users accept at least short-term waiting time? -Will port users be successful in adapting their periodicity or frequency of calls? -Will the port be obliged and willing to adjust its capacities in such a way that it meets maximum demand? Or will the port be flexible enough to vary the capacity input? -Is port operation limited to five days per week only?

4.1 General Cargo Facilities

The term general cargo is used here for all non-bulk cargo.

The most spectacular development in this field was the container and it is generally considered that in the 1990s most of the general cargo trade has been containerized.

Therefore for a modern European port, to be capable of serving as a main-port, must cater for the large third and fourth-generation container vessels and as a result, properly develop container terminals which must be geared for: speed of handling of large numbers of containers, guaranteed berths and service-times for the main vessels, and regular scheduled services to and from the hinterland.

In a large container-operation in a port will attract, and need, supporting facilities such as repair-facilities for equipment and containers, storage of empty containers, services for the trucks and chassis, etc.

Not all containers are carried by large full container vessels. There are also the smaller full container vessels, the multi-purpose vessels and the (full or combined) ro-ro vessels.

In a modern port, therefore, there is a need for the multi-purpose terminal. Such a terminal must be equipped to handle literally all kind of general cargo, including containers, ro-ro traffic, iron or steel, wood, pulp, etc.

In Western Europe ro-ro traffic plays an important role. A multi-purpose terminal should also be equipped with ro-ro facilities.

In some cases and under special circumstances it may be more efficient to have special ro-ro terminals depending upon the organization and the structure of the port in question and also on the type of service. If the port-administration is responsible for the whole operation of the port, including cargo handling, special ro-ro terminals are the best solution.

However, in a so-called "landlord port" where the administration is not engaged in cargo handling, the individual multi-purpose stevedoring company must have the facilities to accommodate ro-ro vessels.

The question of whether to have specialized terminals not only comes up in the ro-ro field. Specialized terminals can be a more efficient solution than multi-purpose terminals. A pre-requisite for this is a sufficiently large and regular flow of goods, so that the occupancy of the infrastructure, specialized equipment and personnel is guaranteed over a sufficiently long period of time.

4.2 Hinterland Connections

Good hinterland connections, mainly road and rail are a must for a port.

For road traffic the port must be connected to the hinterland with a well-designed high-way system. At the same time particular attention must be paid to provide sufficient load-space in the port itself, and in the immediate vicinity of the terminals, at entrances and exits to avoid congestion in peak hours.

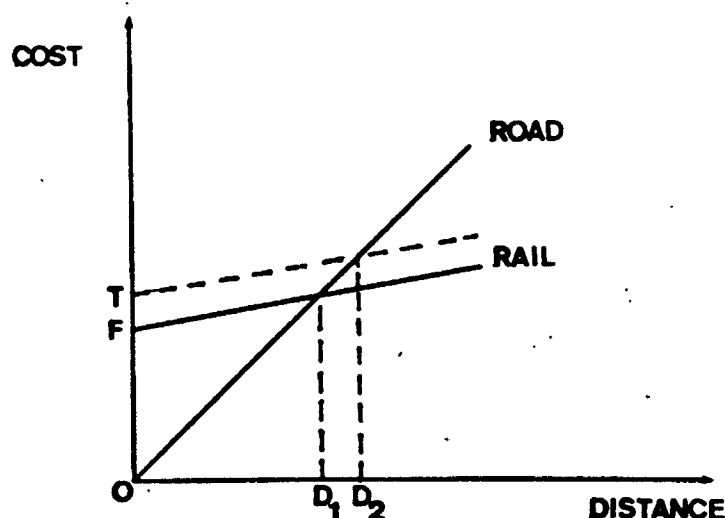
An adequate railway transport connection must also be established whenever necessary.

The objective of implementing an efficient and effective transportation network between the port and its hinterland is obviously to optimize the cost of transport in the whole chain of the transportation system. Indeed it is useless to have an efficient sea link if the inland link is inefficient leading to jeopardy of the gains of maritime transport or even to non-competitiveness.

The economics of both rail and road cannot be generalized depending upon the specific circumstances of each country and of each particular port. However, an indication

of the feasibility of rail transport can be given by comparing its cost structures to those of the main competing mode, i.e. road transport. The high fixed-cost element in rail transport generally requires a certain length of haul in order to make this mode a viable alternative.

The relationship between journey distance and competitiveness is illustrated in Figure 10. This Figure shows, in a very simplified manner, the relatively higher fixed costs (OF) for rail and consequently short hauls of cargo in a short distance would be considerably more expensive by rail than by road. The variable costs of rail transport, however, increase less than those of road transport. Consequently, at distance D1 a break-even point will be reached beyond which rail transport will have a comparative advantage. The break-even point will be moved to D2 if transfer costs (FT) of rail transportation is taken into consideration. Although this general relationship between transport costs and transport distance can be generally established, it is not possible to generalize on the distance at which costs will, in practice, break even. This will have to be established case by case.



SOURCE: D. REZMAN, "The role of container in international transport by rail"
 Rail International, July - August 1977, pag. 308

FIG. 10

Moreover, it must be considered that due to changes in transport systems and organization as well as improvements in inland transport radical changes have taken place with regard to formerly well-defined hinterlands. Established ports have to adjust themselves to these changes offering modern and efficient facilities at reasonable costs in order to attract a reasonable share of trade. At the same time ports must cope for a high degree of flexibility and a continuous search for new solutions concerning all parts of the transport chain. A competitive environment is regarded as a favorable condition to respond to these challenges. The consequence for the ports is a permanent need to fight for their hinterland, i.e. to attempt to maintain and enlarge it beyond its actual boundaries.

5.- MARITIME PERSONNEL

5.1 Economic factors

It is often argued that, taking total ship operating costs of different flags and comparing them, the main variable about which the owner can do anything is crew costs.

Owners should determine manning levels on the basis of the fleet's operational requirements as explained by Captain Glover (8).

"It is necessary for an owner to have a clear picture of his operational requirements for his fleet, and to base his manning on these requirement rather than on the first number that comes into his head. For example, one owner may wish his officers and ratings to carry out as much survey work and maintenance as possible whilst in service, and taking his trading pattern into consideration have a work pattern of 1155 hours per week. He should then base his pay scale on 55 hours per week with a performance factor of 70. To fulfill

his requirements he would require 30 on board. Another owner may employ his ship on a dedicated run with regular turns round, and employ contract shore labour. His work pattern could therefore be 780 hours per week.

This owner may base his pay scale on a 65 hours week with a performance factor of 80. His requirements would be covered with 15 on board.

The example has been made extreme to make the point that there is no set manning level, and that realistic manning depends on the operational requirements and not on a figure plucked out of the air".

Although crew size must be related to work requirements, there are two main options for reducing costs:

- a) flag out
- b) improve productivity by introducing new methods.

5.1.1 Flagging Out

Traditional maritime countries are facing high crew costs and are subjected to tight laws and regulations and union agreements.

Since companies can register their ships overseas, it appears as both the simplest and quickest way of reducing crew costs.

The long-term consequences of flagging out must concern European countries. Eventually everybody will be tempted and what then?. First, trained manpower will have dispersed. Second, there will be no demand for training and the nautical colleges will be forced to close. Then when needed it will be too expensive to re-establish everything. Again we have to ask where future generations of pilots, ship managers, surveyors and shipping experts are to come from; but above all we must not lose the will to compete.

5.1.2 Improving Productivity

Bedaux and Groeneveld (9) pointed out "that manning has hardly even been considered in all its aspects. Indeed, manning reductions only -one of the solutions of the past- have not in themselves created conditions which are essential for better and more competitive management"

The objectives for the Dutch Fleet of Nieuvelt Gondriaan were:

- . to achieve more efficient and economic operations on board and ashore
- . to increase the ship's autonomy as a business unit
- . to create a good working climate
- . to ensure safety

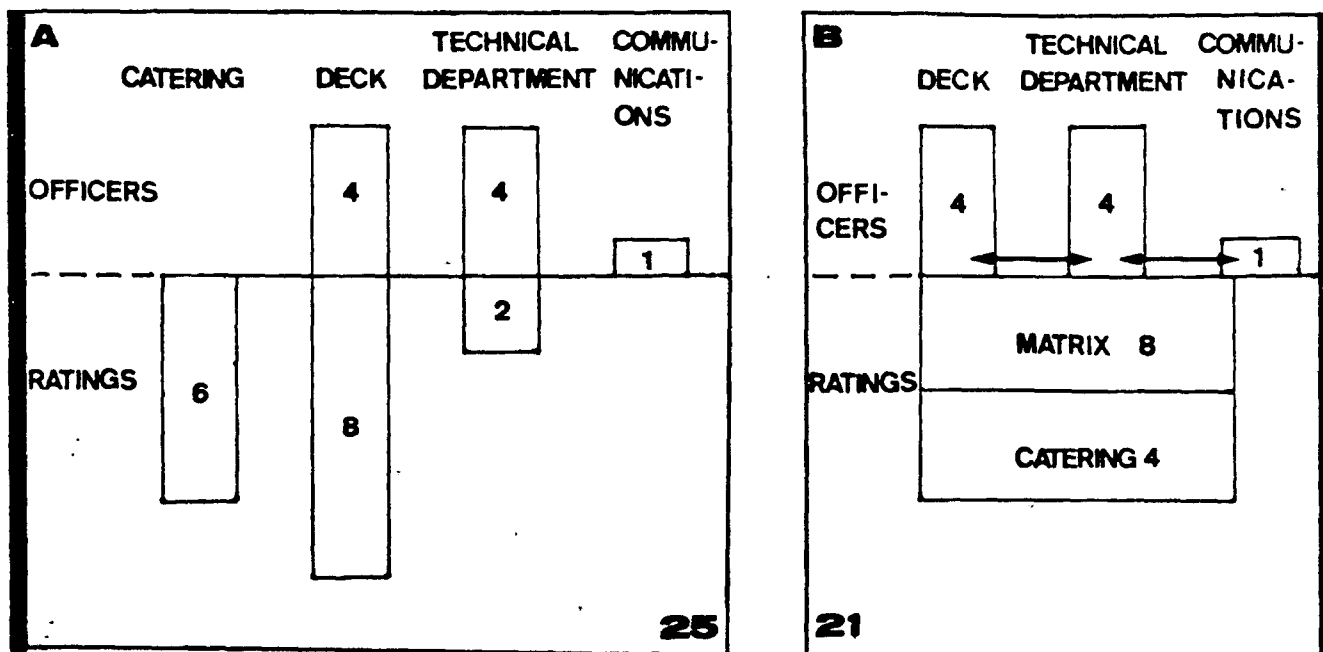
The four planned stages of development are shown diagrammatically in Figure 11 and Figure 12.

In Norway studies were carried out by Ostby and Hetle (10) in an attempt to provide:

- . trained core of combined deck/engine crew
- . decentralized planning of work and maintenance
- . supervision based on self-control
- . budgeting control
- . crew stability by contracts of employment
- . appropriate training programs
- . improved equipment and training for rescue and fire-fighting
- . equalized living conditions on board

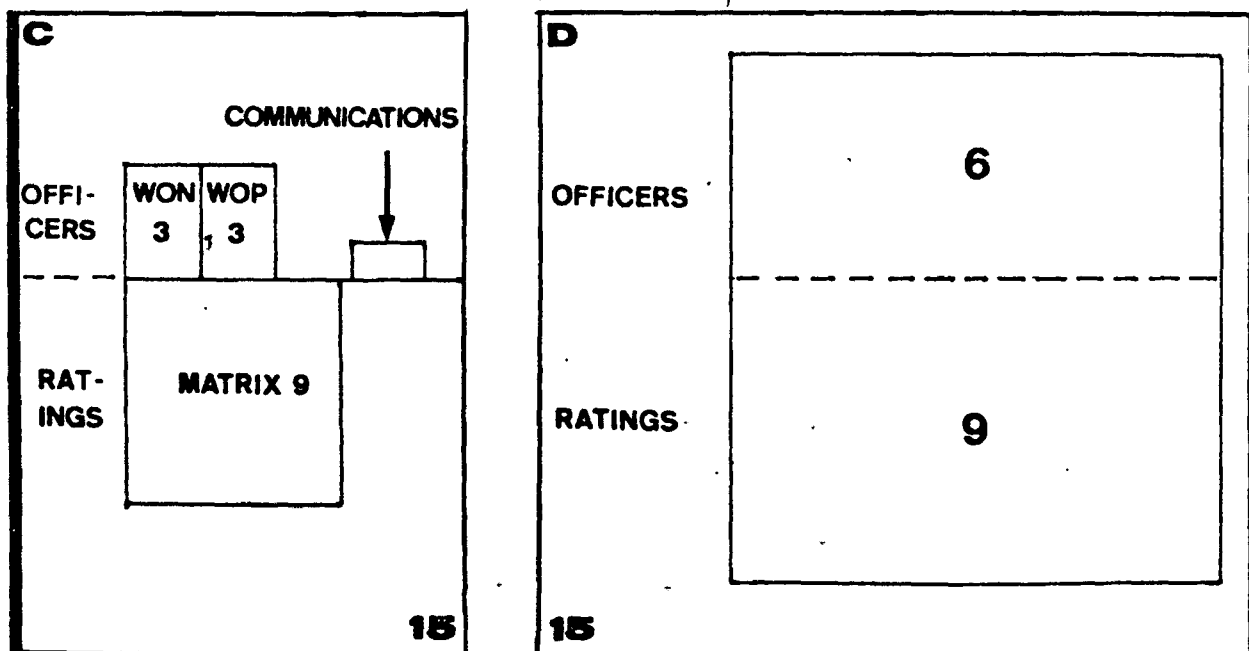
The project demonstrated that significant and lasting change could take place and as a consequence a new educational system was initiated in 1978, introducing three major degree subjects -Nautical, Engineering and Electronics- with an intermediate level of ship mechanic to provide the necessary training from the matrix of ratings having varied responsibilities and functions on board.

THE FOUR STAGES OF MANNING DEVELOPMENT



A - ORIGINAL SHIPBOARD ORGANIZATION: DEPARTMENT MODEL
B - PRESENT SHIPBOARD ORGANIZATION: MIXED DEPARTMENT MATRIX MODEL

FIG. 11



C - NEXT STAGE IN SHIPBOARD ORGANIZATION DEVELOPMENT: MIXED WON-WOP MATRIX MODEL
D - LONG-TERM ORGANIZATION: FULL MATRIX MODEL

FIG. 12

It is also important to point out that the French introduced polyvalent training in 1963 and West Germany has been working on plans to reduce crew to twelve and less than twelve-man ship.

5.1.3 Management: Centralized or Decentralized

In Norway the shipping company DFDS was able to demonstrate that decentralized management does work.

However an industry which becomes preoccupied with reducing crew number rather than examining job functions must look very carefully at decentralization. If the ship's crew is to be reduced, it is obvious that (on a conventional ship) some of the work should be transferred ashore. This balance needs to be assessed in the context of the ship and the way she operates.

RECRUITMENT, EDUCATION AND TRAINING

As Moreby (11) observed the ratio of officers to ratings is rapidly approaching the one to one. It is thus important to give much more attention to the way ratings are employed and trained.

6. Safety

It is well documented that human errors in the operation phase of ships count for a dominant part of accidents and losses. In fact, according to a study on operational/human reliability made by DET NORSKE VERITAS -Research Division, based on 657 Norwegian ship accidents the following structure of causes was defined, as shown in Figure 13.

PERCENTUAL DISTRIBUTION
OF ACCIDENT CAUSES

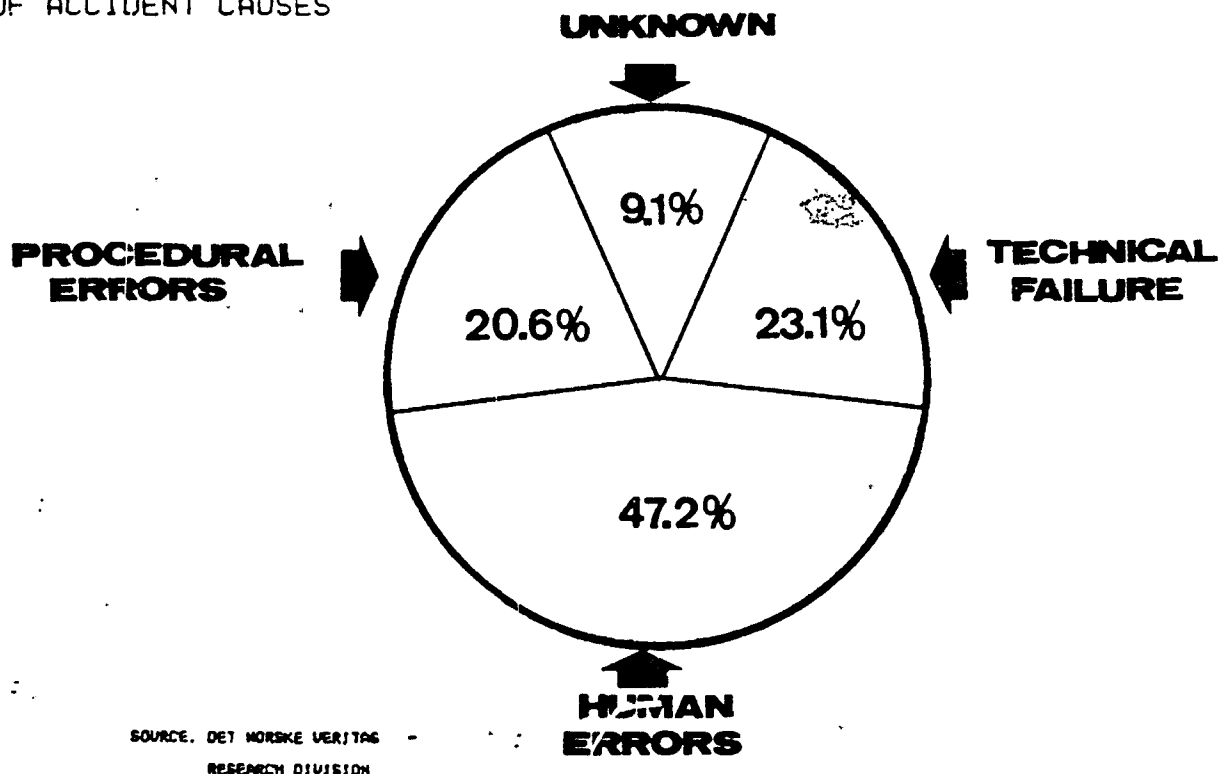


FIG. 13

Safety assumes a new significance with reduced crews and minimum manning. IMO Resolution A 481 (XII) November 1981, adopts a pragmatic approach and recommends that manning levels take account of existing conventions and, in particular:

- . keeping a safe navigational watch
- . mooring and unmooring
- . operating water tight arrangements
- . manning safety
- . keeping a safety engineering watch
- . keeping the main propulsion unit and auxiliaries in good conditions
- . maintaining safety arrangements and shipboard cleanliness
- . providing medical care

Administrations are requested to issue a document of safe manning to their satisfaction, following the principles associated with the above operations.

Manning is an essential element of seaworthiness, and it is closely linked with two main factors: the level of ship's

technology and the organization of work on board ships.

(i) Manning versus technology

Studies have been made in many countries, mainly in Japan and Norway, in order to determine how new technologies fitted on board ships can contribute to reducing crew and how far crew reduction can go with safety.

According to a study carried out by the Japan Shipowners Association entitled "The Modernization of the Seafarers System in Japan", a ship can be safely manned according to its standards of modernization as follows:

CONVENTIONAL SHIP → MODERNIZED SHIP "A" → MODERNIZED SHIP "B"

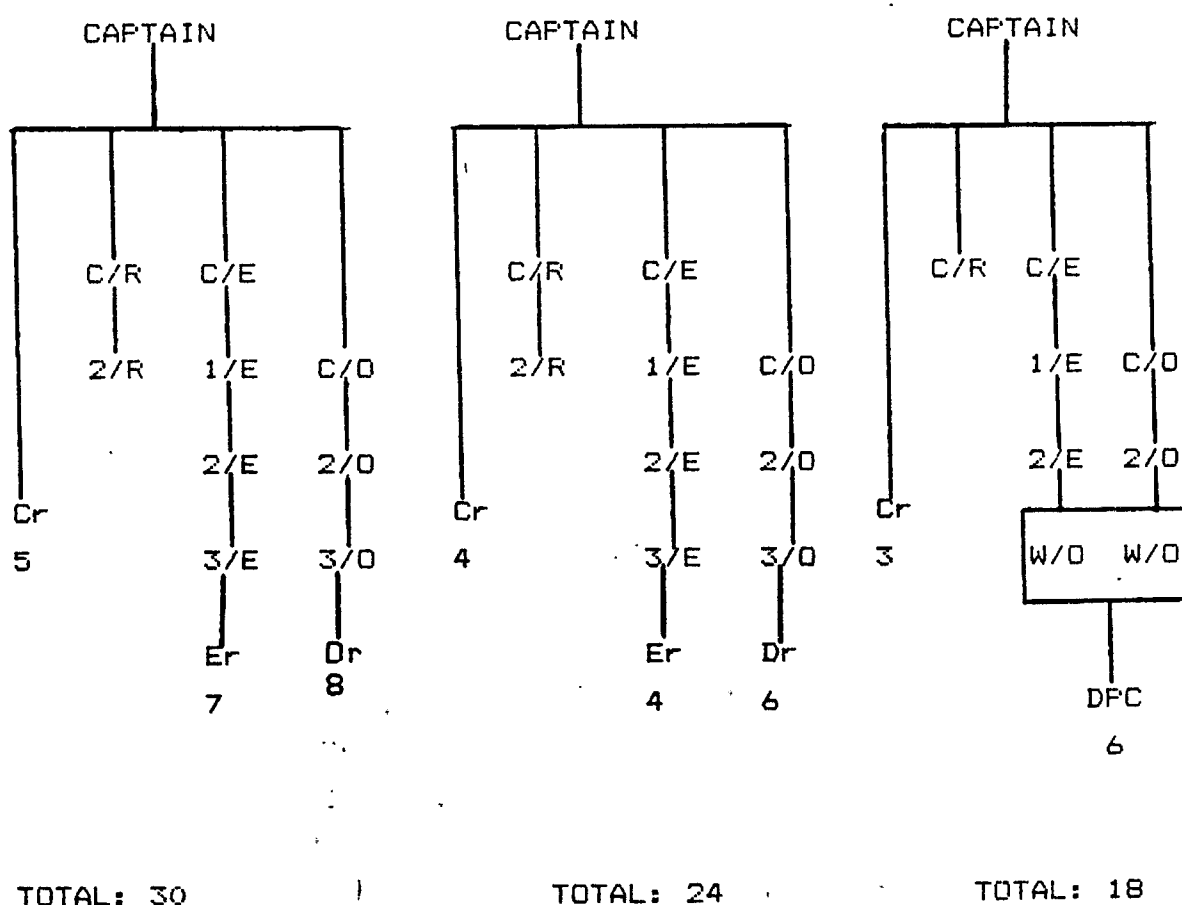
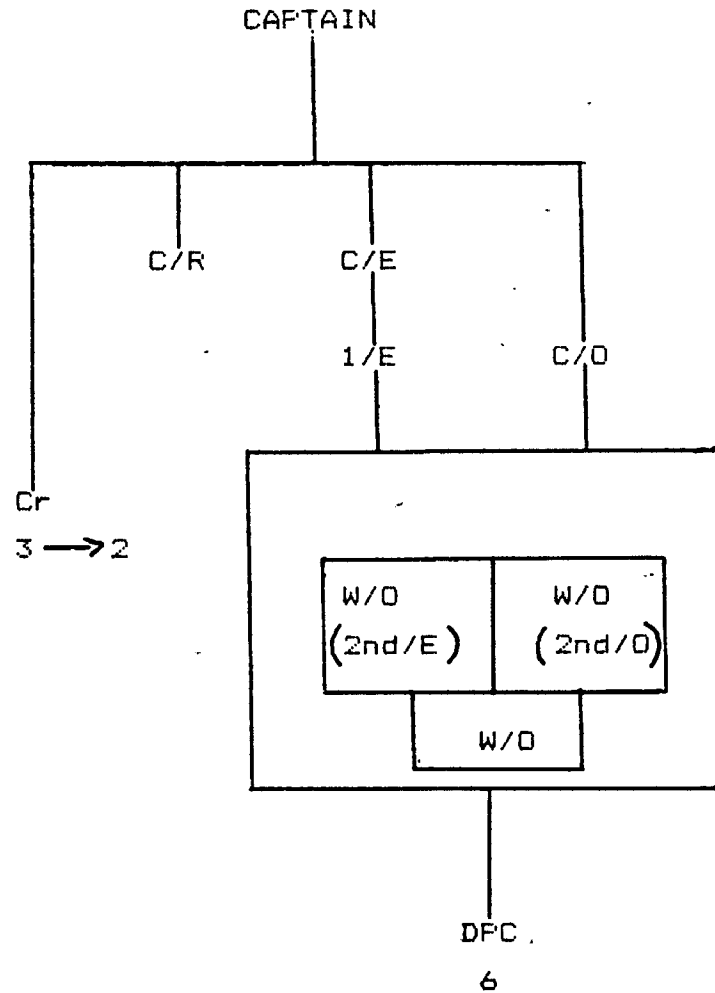


Chart 4

MODERNIZED SHIP "C"



TOTAL: 17 -- 16

KEY: Cr : catering ratings
 C/R: chief radio
 C/E: chief engineer
 C/O: chief officer
 Er : engine ratings
 Dr : deck ratings.

However to make the transition from the conventional manning scale to modernized ships the following must be fitted on board ships:

Modernized ship "A"

- (1) Remote control device propulsion machinery, monitoring and alarm devices for propulsion machinery and its direct auxiliaries, to be fitted on the navigation bridge.
- (2) Automatic start system of stand-by pumps of L.O. pump, F.O. supply pump and cooling water pump for propulsion machinery
- (3) Safe guard system of propulsion machinery for excessed revolution and loss of L.O. pressure
- (4) Automatic temperature control system of fuel oil, lub. oil and cooling water for propulsion machinery
- (5) Automatic control system of electric generating and distribution units.
- (6) Safe guard system of electric generating units
- (7) Automatic temperature control system of lub.oil and cooling water for electric generator's motor
- (8) shielded fuel oil injecting pipe of main diesel engine
- (9) Automatic fire detecting device in engine room
- (10) Alarm device for machineries in engine room, to be fitted in engineer's cabins

Modernized ship "B"

In addition to the requirements of modernized ship "A", the following items are to be fitted:

- (1) Remote control system of injecting pipe of fuel oil tank (except for the ship which is not necessary this system as situation of the pipe)
- (2) Remote controlled level gauge and high level alarm of

- fuel oil tanks (except for tanks are in engine room)
- (3) Automatic data logging device of main propulsion machinery
 - (4) Navy navigation satellite system
 - (5) Automatic steering system
 - (6) Remote control device of mooring winch placed on bow and stern
 - (7) Remote control system of liquid cargo handling on the ship carrying liquid cargo in bulk
 - (8) Remote control system of ballast handling on the ship necessitated to adjust heel and/or trim by ballast water during cargo handling
 - (9) Power driven devices of side-port and ramp-way for cargo handling
 - (10) Maritime satellite communication system

Modernized ship "C"

In addition to the above, the following items are to be fitted:

- (1) Central engine monitoring system equipped at ship's bridge
- (2) Automatic radar plotting aids
- (3) Effective monitoring system of reefer container for container ships
- (4) Fire-wire winch and one-man operating hose crane or derrick for tanker
- (5) Automatic deck cleaning system for ore and coal bulker

According to a study carried out by DET NORSKE VERITAS - Research Division (12), the casual factor associated with manning and the working situation on board: navigational errors, inadequate coverage of the watch and special human factors, represent 44.7% of

casualties, considering a sample

of 2,742 collisions and groundings. Then the criteria used for establishing the size and composition of the crew in satisfactory way, from a safety point of view, constitute an essential concern of the Maritime Administration.

However it is extreme difficult to establish a criterion which can be a generally basis for correct manning, considering the wide range of types of ships and conditions of operations within a context of achieving the lowest possibly manning compatible with safety. The best outlet to this situation seems to be a technical analysis on a case-by-case basis, which can be considerably simplified and made completely practicable by developing an analysis model for establishing the manning requirements.

(ii) The organization of work on board ships

Safe and efficient operation of ships cannot be achieved unless an adequate work force both in number and qualification is provided.

The manning level will always depend upon the number of different functions that are to be carried out under specific operational conditions. Because of the fast technical developments, especially in micro-electronics the human element has a decisive role to play. In fact if various tasks, such as navigations, communications and engine room control, have to be performed by one man, high demands are then made on the human capacity which will be enormous leading to mental workload with unforeseen consequences.

Every ship type has a specific manning level functionally and operation-conditionally determined. A model for systematic professional judgements, which makes it possible to take all the element influencing

manning into consideration, is required in order to establish the safe minimum and optimum manning.

This can be arrived in the following two ways viz.

- (1) The use of specific internationally recognized standard models or methods by the owners at the design stage to determine the manpower need in relation to operational tasks, design and equipment alternatives. This manning level is subject to the approval from the Governmental authorities who evaluate the safety functions using the same model or an equivalent method. This is practical.
- (2) Equally viable is the method of operational safety classification by established classification societies. This comprises various class notation for all main functions. The various notations are based on operational requirement, and they specify the manning required within each operational area and operators' knowledge-level. The class and the owner only needs to specify the appropriate class notation to obtain the necessary safety manning certificate to be issued by the appropriate Governmental authorities.

7.- CURRENT SITUATION AND FUTURE TRENDS FOR THE EEC's SHIPPING POLICY

Since 1974 the EEC has included shipping in the economic principles of the Treaty of Rome, i.e. "free trade" within the EEC. External relations, however, are less clearly defined. Pearson (13) suggested the EEC policy should have two main complementary pillars: "the first would be that our ship operators should continue to have access to shipping markets on as wide a scale as possible opposing flag discrimination by non-member countries and secondly our shipping should be in a position to exploit efficiently the

markets to which access is thus successfully retained"

Since 1980 the EEC's merchant fleet has been reduced to about 40% while its participation in the world tonnage dropped from 29 to 19%.

The recent evolution of the EEC's merchant fleet in the context of the world fleet can be summarized as follows:

FLEET	EEC	WORLD	REMARKS
TANKERS	↘	↘	MORE THAN PROPORTIONAL
GEN. CARGO	↗	↗	
CONTAINER SHIPS	↗	↗	
CONVENT. SHIPS	↘	↘	MORE THAN PROPORTIONAL

↘ = Reduction
↗ = Increase

In this context (14) it is observed that:

- The Community's fleet on average is now older than the world fleet in contrast with the previous years
- The rate of scrapping of old vessels and or ordering of new ones has slowed down, as has the proportion of the fleet which is laid-up
- The decline of the fleet has been reflected in a sharp decline in seafaring employment
- Demand for shipping services worldwide recovered marginally in 1986 but is still below the level at the start of the decade
- The Community fleet carried 70% of internal Community trade and 30% of external trade in 1983

- . The casualty rate of the Community fleet has worsened while the world average has improved

The main problem areas have been identified and solutions are being considered.

The first is the problem of how to maintain the ships under European flags. In this context the following areas of possible action can be considered: (i) analyze the causes and impact of consequences of flagging out. (ii) guarantee that when flagging out, the international standards will be maintained (iii) the possibility of progressing towards a common identity of the European fleets under a European flag.

The second perspective is the subject of ensuring the future of the Communitarian shipping. Considering that EEC is one of the most important commercial powers, it needs efficient and competitive maritime transport services. However its shipowners are not in a position to face the competition of other lower costs flags. Then the EEC needs to strengthen the mechanisms of cost reduction in order to face its competitors without reducing the level of services offered.

Thirdly it is important to point out the great role EEC plays in the shipping world. In fact its international commercial and political power should be oriented towards the solution of the main problems which are responsible for the present crisis in shipping such as : over-tonnage, unfair competition, subsidization versus free-competition, maritime fraud and so on.

In a recent maritime symposium held in Antwerp in June 1987 organized by the Presidency of the Council of the EEC in cooperation with the European Commission the following conclusions were considered:

a.- MAINTENANCE OF SHIPS UNDER EEC FLAGS

- . ships should be kept under EEC flags, on competitive conditions, for strategic economic and employment reasons
- . flagging out will be unavoidable unless adequate measures are undertaken in order to improve the present situation of the EEC fleet
- . a common European flag should be considered if it provides low operation costs
- . to maintain the fleets under European flags positive actions are necessary. The four Council Regulations are not enough.

b.- TO ENSURE THE FUTURE OF THE SHIPPING INDUSTRY

- . to ensure the future of the EEC's fleet it is necessary to achieve adequate levels of competitiveness without losing standards
- . it is necessary to take positive measures in order to lower the costs towards acceptable levels of competitiveness
- . associations of European shipowners should be encouraged

c.- THE ROLE OF THE EEC IN THE WORLD SHIPPING

- . the Memorandum of Understanding on Port State Control (MOU) should be generalized and standardized
- . adequate measures should be implement in order to control the maritime fraud
- . it should be studied, without preconceived ideas, the possibility of implementing a scheme of incentives to scrapping and promoting this idea at an international level in order to accelerate the disappearance of over-tonnage both at the European and global level

- . to study the possibility of European Community ships to carry the Community's emblem which could contribute at least as a psychological factor towards the creation of the European maritime space.

d.- THE SETTING UP OF A COMMON SHIPPING POLICY

After a period of internal discussions in the EEC Commission, in the Council of Ministers of Transport and simultaneous lobbying, the EEC Council of Transport Ministers adopted on 16 December 1986 four proposals which are generally considered as the first stage of a Community Shipping Policy:

- . Council Regulation 4055/86, applying the principle of freedom to provide services to maritime transport between Member States and between Member States and third countries. It lays down a timetable for the removal of cargo reservation measures in individual Member States and also of cargo-sharing arrangements contained in bilateral agreements between Member States and third countries. However Governments did not come to any agreement to eliminate restrictions in the national coastal trade of individual Member States
- . Council Regulation 4056/86 lays down detailed rules for the application of articles 85 and 86 of the Treaty of Rome to Maritime transport. The aim is to avoid that through agreements, decisions, dominant positions and so on, transport could be closed to competition with consequent prejudice against transport users and consumers. However, a number of important issues are still being studied including the treatment of liner consortia.

- . Council Regulation 4057/86 provides protection for the EEC liner shipping companies from unfair pricing practices or "dumping" in shipping by state owned or supported companies which damage the community shipping industry.
- . Council Regulation 4058/86 provides a program of coordinated action to counteract protectionist activity by other countries, designed to safeguard free access for the EEC ships to cargoes in ocean trades.

It provides for a procedure of diplomatic representations to offending countries and, where those fail, specific counter-measures aimed at correcting the harm to EEC operators caused by such practices.

These four regulations so far adopted by the Council of Ministers are only the first steps in establishing an EEC wide shipping policy aiming to maintain and develop efficient and competitive maritime transport services to benefit from the EEC's trade

To achieve this objective a set of proposals was prepared by the Commission and submitted to the Council, involving the following aspects:

- . State assistance to shipping particularly in the field of fiscal benefits
- . Social measures, such as :
 - . improvement of work conditions on board ships

- . minimum rules to follow in case of unemployment
- . mutual recognition of diplomas and certificates
- . rules related to training
- . more favorable fiscal regimes for seafarers

. . Technical measures such as:

- . mutual recognition of technical equipment and for inspection of ships
- . to apply the IMO and ILO safety standards

FOOTNOTES AND REFERENCES

- 1.- Arnljot S. SVENDSEN, Shipbuilding Capacity and Tonnage Surplus; INTERTANKO's Annual General Meeting, Tokyo, April 18, 1985, pg.14.
- 2.- As pointed out by Thorsten RINMAN in the Future of Shipping, Svensk Sjöfarts Tidsningen 14, 1984, pg.36.
- 3.- D. STONEBRIDGE, The views of a Shipping Analyst on the 1990's, EUROSHIP 84; The Institute of Marine Engineers, paper 1.
- 4.- D. STONEBRIDGE, op. cit.
- 5.- H. SOHMEN, The Concerns of Shipowners in Today's Market and Regulatory Environment; Maritime Policy and Management, 1986, Vol.13, No.1, pg. 13-14.
- 6.- G.A. SMITH, The future of European Shipbuilding; paper 4, EUROSHIP 84, Institute of Marine Engineers.
- 7.- H.L. BETH, Visiting Professor of the WMU; Lectures for the General Maritime Administration .-1987 Course.
- 8.- J. GLOVER, Realistic Manning; Proceedings, Ergosea, The Second International Conference on Human Factors at Sea, October 1981, Nautical Institute

- 9.- BEDAUX and GROENEVELD, Organizational Changes in Shipping with Special Reference to Changes in the Fleet of Vlievelt Goudriaan; Erogosea, 1981.
- 10.- H.DSTBY and A. HETLE, Present and Future Aspects of the Ship Research Programme in Norway; 1975.
- 11.- H.D. MDREBY, Methods of Organizing the Work Load on Board and the Educational and Training Implications; Seminar on Ship Manning Present and Future, February 1983, HCMM and the Nautical Institute.
- 12.- DET NORSKE VERITAS, Report No.81-0097: Cause Relationship of Collision and Groundings; Final Report. Project Leader K.H. DRAGER, Oslo, April 1981.
- 13.- J. PEARSON, Shipping and the European Community; Seaways, 1981.
- 14.- Asociacion de Navieros Espanoles (ANAVE), No.223, June 1987, pg. 11-19..

CHAPTER IV

TOWARDS THE FORMULATION OF A MARITIME STRATEGY FOR PORTUGAL

1.- THE CONCEPT AND DEFINITION OF MARITIME STRATEGY

The term strategy is one of the most widely used and abused expressions in business today. As with most concepts that get popularized its meaning has become more and more distorted as its popularity grows.

Then it is important to arrive at a precise definition of maritime strategy which should adequately serve the purpose of this research i.e. to consider the role of Government including Maritime Administration as strategy maker.

The concept of maritime strategy that was first introduced was concerned with the deployment of military power at sea. In fact the term conjures up the interpretation of traditional British strategy popularized by eminent naval theorists like Alfred Thayer Mahan and Sir Julian Corbet. According to Corbet maritime strategy was the command of the sea which guaranteed the security of the home isles, gave access to overseas resources and ensured strategic mobility while denying the resources and mobility to the enemy.

In the sphere of the economical sciences the notion of strategy appears in its wide sense, associated with the concept of economic development while historical process of transformation of the economical and social structures to achieve determined objectives of macroeconomic and social nature.

According to some authors (1) such objectives can be divided into three classes being one of them: "The objectives aiming to maximize efficiency in resources utilization,

namely through the global increase of the productivity of the productive factors"

In its economic and political sense maritime strategy is to ensure that the maritime services serving the international trade of any country operate in the interest of that country, through a combination of short and long term policies of the Government/shipping industry.

In this context the most adequate definition of strategy to be adopted in this paper is the one described in the Dictionary of Business and Management (2) as follows: "Guidelines for making directional decisions that influence an Organization's long-run performances".

Here we will call these guidelines "strategic objectives" being the directional decisions "a set of policies" to achieve them.

Having said that, it is important to stress now that public strategies and corporate strategies form a system, i.e, mutual dependence and integrated approach to a uniform and coherent action in order to achieve, as best as possible, both the particular and national interests and objectives

On the other hand at shipping industry level, by corporate strategy it is meant in accordance with Andrews (3) "the pattern of decisions in a company that determines and reveals its objectives, purposes or goals, produces the principal policies and plans for achieving those goals, and defines the range of business the company is to pursue, the kind of economic and human organization it is or intends to be, and the nature of economic and none economic contribution it intends to make to its shareholders, employees, customers and Communities"

The interrelationship and interdependence between public strategy and corporate strategy can be better shown by Figure 14.

THE INTERACTION BETWEEN PUBLIC AND CORPORATE STRATEGIES

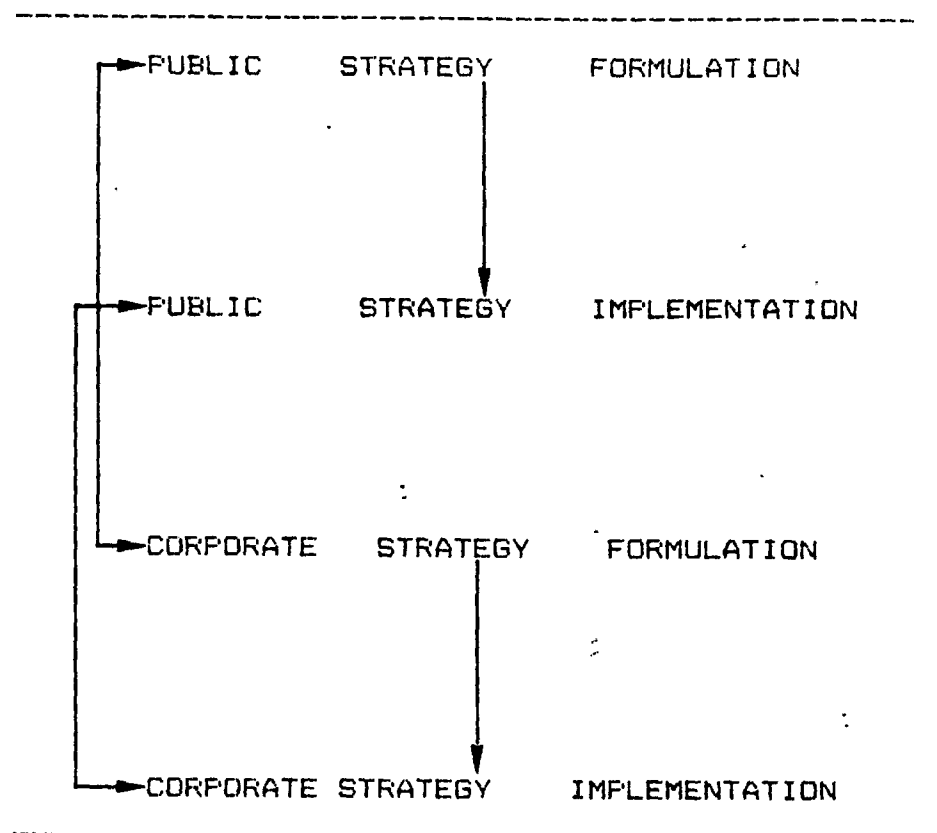


FIG.14

2.- THE IMPORTANCE OF STRATEGY THINKING

2.1 At Maritime Administration Level .

Over-reliance on shallow thinking leads administrators and managers both public and private to look for cheap and easy solutions rather than costly and difficult. But the way to succeed is to confront problems (suffering the inevitable pain of doing so) and develop effective solutions (which need hard work)

In fact the best answer to the question of why Governments should give particular attention to the

formulation of national strategies and public policies, is that they should deal with complexity.

The main demension of this complexity is the variety and interdependence of activities receiving the impact of Governmental intervention which on the other hand conditioned the extend and effects of such intervention. That variety of forms must be coordinated and therefore it is necessary to establish an "internal coherence" for the public policies pattern. To neglect this is to transform the formulation of policies into a merely academic exercise.

Strategy thinking also implies a change of attitude and mentality from short-term to medium/long-term orientation.

It has been said that "short term orientation" is one of the primary reasons for the decline of the Portuguese maritime sector. Even when policy makers recognize this problem, it often remains trapped by traditional approaches.

Some shipping managers although accepting that short term orientation is a major problem, they confess their own inability to solve it due to their dependence on national policies.

Obviously it does not mean State intervention or State entrepreneurship in shipping business. The role of the State should be to formulate a strategy and implement the adequate policies in order to create the necessary conditions for shipping promotion and development.

In other words the main scope of strategic thinking at Administrative level is to create and maintain a healthy maritime climate in order to encourage:

- a) The arising of shipping entrepreneurs such as:
shipowners, ship operators, ship managers, shipping brokers, etc.
- b) The development of ancillary industries like
shipbuilding, shiprepair, towage, classification societies, etc.
- c) A modern capable legal framework, and an easy and

fair settlement of disputes in maritime affairs.

- d) Closer relationship among the various interested parties involved in shipping, for example shipowners' associations, shippers' councils, seafarers' unions, etc.

Last but not the least, Portugal's entry into the EEC will gradually open up new markets, which will enable her to benefit from Community funding and facilitate inward foreign investment, but it also places Portugal in competition with her partners whose shipping industry is generally much more developed. For the advantages to outweigh the risks, the Portuguese Administration must not only focus on the short term management but they must also tackle the deep-rooted structural problems beseting the maritime sector.

2.2 At Shipping Industry Level

2.2.1 General

According to Graig Hickman and Michael Silva (4) "locating, attracting and holding customers is the purpose of the corporations strategic thinking. Without such a concret goal, strategic thinking degenerates into an ivory tower experience"

These authors considered that strategy thinking involves three main components: customers, competitors and companies.

- . customers - is the most important element in strategy thinking and action must be taken in order to satisfy customers needs
- . competitors - a deep analysis of the competitors is of prime importance for a successful strategy, to know who they are, what means they use, what customers they serve and what effectiveness they achieve; then act

in order to gain a sustainable comparative advantage.

- . company - capitalize on company strengths bearing in mind that it takes time to develop them.

To sustain comparative advantage the following actions are recommended:

- . detail how each competitor attacks the market, what their stated or implied assumptions are and analyse every direct or indirect competitor
- . locate any gaps that the competitor have not filled, analyse if the organization can fill them
- . identify the value which the organization provides to customers and at what stage in the business system it occurs and compare it with that provided by competitors
- . simulate competitors' reactions to the organization's potential actions.

To capitalize on company strength, the following factors must be taken into consideration:

- . carefully list the organization's strength and weaknesses. Look for strengths and weaknesses never considered before
- . think of all the new ways to apply the organization's strength to new services, markets or approaches
- . evaluate the products, services or business of the organization as if they were a portfolio of investments and consider which a manager would bet his own money on
- . think of all opportunities the organization strength can seize and the threats that can take advantage of the organization's weaknesses.

2.2.2 Strategic thinking in shipping - The Norwegian Experience (5)

In 1984 the Norwegian Shipowners Association sponsored a study on "Excellence in Norwegian Shipping" inspired by the popularity of the bestseller IN SEARCH OF EXCELLENCE, published in 1982 by Thomas Petters and Robert Waterman, describing successful action in American Corporations.

This study was summarized by Erick Stavseth in a series of three articles published by the Shipping News International.

One of the main aspects highlighted by the aforesaid study for the creation of excellence in shipping is exactly strategy thinking.

In simply terms strategy can be defined as: doing the right things, investing in the right areas at the right time. Thus, time dimension is of crucial importance.

For example an owner who decided to invest in a panamax bulk-carrier towards the end of 1981 would pay about \$ 30 million whereas an owner who took this decision a year later only would have to foot a bill of about \$19 million -a difference of \$11 million in just 12 months-.

The problem lies in, however, how to determine the right time. These is in fact a very difficult question for which tools, such as forecasting methods are not effective enough.

Success in this respects seems to be tied to better mental preparation for such market developments, overcoming the current market outlook, by being greatly concerned about down-side risks and by providing couitions for hard times.

Being close to the customer is an essential element of shipping strategy which requires the implementation of an adequate marketing policy and organization. In fact successful shipping companies have a better understanding of the customer and their needs than other companies have. They identify with their customers, they try to think like them, and forecast their needs for the future. It requires a good

relationship between shipowners and shippers. A first step towards such objective is to prove reliability and concern about the customer and to fulfill their contractual commitments by showing flexibility and a willingness to compromise, when necessary.

To ensure a good relationship and physical closeness to the customer is of vital importance, which implies travelling or establishing representative offices abroad. In this context to remain competitive is of prime importance which requires that all information on the customer and competition be dealt with systematically and continuously.

CONTINUOUS INNOVATION

Successful companies make all efforts to remain in the forefront of development: technically, organizationally and financially. This requires continuous innovation. Before going ahead on innovation attitudes in shipping, it is important to analyse in more detail the concept of innovation.

In Webster's Third New International Dictionary Unabridged (6) the word "innovation" is defined as: i) the act or an instance of innovating: the introduction of something new; ii) something that deviates from established doctrines or practice: something that differs from existing forms.

It refers to the infusion of something new into real world activities; hence it excludes abstractions such as new theories or concepts.

Innovation may come about as a result of such new theories or concepts, as a result of new innovations, or simply as a result of new ways of implementing previously known principles.

In economics, innovation means one of three things (7):

- 1) the implementation of changes in production i.e. changes in the production function;

- 2) the introduction of new types of commodities in the market, i.e. the appearance of new supply functions;
- 3) procedural changes introduced into markets or the economy as a whole, i.e. social reform.

Professor Joseph A. Shumpeter defined the innovation by means of the production function (8). This function describes the way in which a quantity of a product varies if quantities of factors vary. If instead of quantity factors, we vary the form of the function we have an innovation.

One way of innovation is to find unorthodox methods of doing old things.

Some successful innovations in shipping have been done in various areas such as: exploring economies of scale, developing technical designs that enabled continuously larger vessels, integrated transportation, design of vessels and construction of engines, trucking, container handling, etc.

Again developing new designs and new transportation concepts requires a close relationship with the customers considering that it must meet the shipper's needs and interests.

CONCENTRATION

As pointed out by Erik Stavseth: "By concentrating in a few areas, the companies ensure that each activity reaches sufficient critical mass to become a factor in the market. Critical mass is also necessary to ensure that the activity gets sufficient management attention and is not left unattended".

Diversification is normally considered too risky. It involves the need of people with proper knowledge of new markets which companies normally do not have. Starting by learning needs too much time and involves high probability of failure.

By concentrating on few key areas companies can gradually move the weight of the business out of the less attractive areas into the more promising ones.

It does not mean that shipowners should choose to stick to their traditional business but points out the need to take a good measure of risk. In fact as Mr. Peter Smedvig, the well-known Norwegian shipowner, used to say "those who do not dare, will never win".

OUTSIDE INVESTMENT AND RISK LIMITING

A dilemma which has been frequently discussed is whether successful shipping companies did invest outside shipping at all.

Until recently, there was little evidence that they have gone outside the shipping or offshore areas.

This is now about to change. In fact due to the present crisis in shipping, shipowners try to reduce risk to the highest extent possible through investment in other activities.

For example, Wilh Wilhelmsen, one of the most important Norwegian shipping companies reorganized its business activities in order to include "onshore" investments as one of their key areas.

To enter into new markets in a gradual and controlled way is one way to reduce risk exposure.

A typical way to limit risk is by dividing the company into small separate companies with limited guarantees from the mother company.

3.- THE EEC APPROACH TO A COMMON MARITIME STRATEGY

3.1 Introduction

It is important to bear in mind that since the moment Portugal became a member of the EEC questions like the

formulation of a maritime strategy must be considered in the context of the existing regulations and future provisions which are likely to occur at the Community level, by analysing the position of the EEC's Organs on the subject.

3.2 The Commission's Program

The Commission's program proposals are:

- a) State aids, including fiscal treatment
- b) Social matters
 - . study of differentials in pay and conditions of employment
 - . improvement of specific working conditions in the shipping industry
 - . minimum rules in cases of dismissal
 - . mutual recognition of diplomas, licenses and certificates of competence
 - . training provisions
 - . favourable tax regime for Community seafarers
- c) Technical matters
 - . mutual recognition of technical equipment of ships
 - . mutual recognition of inspection of whole ship
 - . application of IMO and ILO safety standards

3.3 The European Parliament Position

The Parliament agreed on the necessity of maintaining a viable and effective Community-flag fleet and concluded that Community shipping policy should be based on an active strategy. This strategy would include inter alia an open and constructive approach to new developments in shipping; the possibility of applying protective measures selectively where the viability of the shipping sector was seriously threatened; the elimination of surplus capacity and the modernization of the fleet with incentives to Community owners to order in Community yards; a coordinated package of

measures to counteract and reduce flagging out; special attention to the position of developing countries and their participation in world trade, and the employment of seafarers in accordance with the principles of the Treaty of Rome.

3.4 The Economic and Social Committee Position

The Economic and Social Committee's acknowledged the importance of maintaining a viable Community flag fleet and considered that the Community's maritime transport policy should be concerned with the promotion of maritime activities such as the carriage of goods by companies in Member States, that this policy should be essentially pragmatic and realistic, and that it should serve the social, economic and political interests of the Community, enabling a prompt and effective response to any threat to these interests. Support for flags of convenience, whether Community-owned or not, was not the best means of pursuing these interests, in the Committee's view.

Among measures it proposed were inducements to encourage scrapping; attention to the relationship between the financing and building of vessels and their competitiveness; means of helping to maintain the employment of Community vessels (such as tax allowances and assistance with training and repatriation costs); closer monitoring by the Commission of flagging-out, and tighter enforcement of IMO and ILO Conventions.

3.5 The Community's Role in World Shipping

The international nature of the shipping industry presents both constraints on and possibilities for the Community's ability to tackle the factors worldwide. The constraints are physical - notably the oversupply of ships - and political, with multilateral shipping agreements with certain third states (and the exclusion from them of others)

and the tendency for the interests of shipping to be subsumed in wider trade and other considerations in international discussion.

The possibilities arise from the economic and political strength of the Community and from its importance as a flag state for its own fleet and as port state for much of the rest of the world's shipping. These factors could enable it to initiate action or policy directions with reasonable effectiveness. Firstly, it can play a major role in the enforcement of international rules and standards; secondly, while no single country or indeed group of countries can solve the problem of over-capacity on its own, the Community can make useful moves in this direction; and thirdly, the Community may be able to promote the raising of standards in shipping practice.

3.5.1 Ship scrapping

One of the fundamental causes of the crisis facing world shipping is overcapacity, i.e. there are too many ships. This overcapacity inhibits the recovery of shipping markets, exerts a downward pressure on profitability and wages, and undermines attempts to enforce and improve international standards governing the operation of shipping.

There are number of ways of tackling the problem of overcapacity from the point of view of affecting the supply of ships. One way is to restrict the future supply of ships by reducing shipbuilding capacity. Although this has happened at an EEC level it has not been fully matchet in the Far East. Thus while world shipbuilding capacity has fallen 20% since 1976, the Community's capacity has been cut by 45%.

Another way to reduce overcapacity is to cut the current supply of vessels by scrapping. While a scrapping initiative should be on worldwide basis if it is to have a fundamental impact on overcapacity, there may be a role for Community-level action, at least initially. An added advantage of

encouraging EEC shipowners to scrap their old or unwanted vessels would be that they would not have to resort to the second-hand market and thereby provide the vessels for the cheap sub-standard competition with which EEC shipping has to compete.

Nonetheless if scrapping is to be encouraged at EEC level, careful consideration needs to be given to the form this encouragement should take. It has been suggested that a scrapping fund could be established which would be able to reimburse owners with the difference between the scrap value and the second-hand value.

Another possibility is the establishment of a ship scrap guarantee fund along the lines of the one established in Japan. This would enable shipowners to remove ship mortgages from ships they wish to scrap without having to pay back the mortgage immediately. The fund could be tailored in such a way as to favour the scrapping of less productive, uncompetitive ships. This idea would need to be explored further with interested parties such as shipowners, seafarers, bankers and others. The concept could, of course, be extended beyond the Community.

3.5.2 Raising Standards of Shipping Practice

Shipping is a risky business, both commercially and physically, but there are activities beyond the bounds of normal shipping practice which merit attention by the Community as a whole.

On the commercial side, these include the increased incidence of maritime fraud. As responsibilities for various aspects of shipping operations have become diversified and as the combined effects of the recession in world shipping markets and overcapacity in shipping have produced a downward pressure on freight rates, so the scope has been created for the proliferation of fraudulent business practice in the shipping sector. Such practices cost the industry a great

deal, they have a particularly serious impact on developing countries, and they can put innocent seafarers at risk both in terms of safety and of criminal prosecution. UNCTAD is currently preparing an action programme and the Community will undoubtedly wish to play a role in the development of such a programme as well as considering any other measures it can take.

On the physical risks, much can be done to reduce the dangers in the industry through the proper application of international safety standards, but there are other threats to shipping. Of particular and growing concern are piracy, terrorist threats, and attacks by warring countries on innocent merchant ships, notable, at present, in the Gulf. These have resulted in the death and injury of seafarers and the loss of ships.

In many cases, such attacks are at the instigation of or at least under the control of states and it may be appropriate therefore for the Community to consider the establishment of an information system to monitor such incidents with a view to the adoption of a procedure whereby coordinated pressure by Member States could be placed rapidly on those states responsible for actions against merchant ships registered in the Community.

4.- BASICS FOR A MARITIME STRATEGY FOR PORTUGAL

4.1 Introduction

Apart from providing a service to trade, shipping as an independent industry has a direct bearing on the development of the country. It helps to improve the foreign exchange situations, creates employment, fosters the development of technical know-how, promotes economic integration and helps to safeguard the national sovereignty, particularly in times of political crisis.

Apart from these direct effects, shipping investment contributed substantially to the diversification of the country's economy as it requires a whole range of support industries and services. These include: shipbuilding and repairing, supplies, equipment, insurance and banking services, telecommunications, etc.

It is therefore obvious that shipping plays a predominant role as a multiplier of beneficial economic effects.

4.2 Main factors to be considered

Considering the situation described in the previous chapters the main aspects to be considered as a basis for the formulation of a maritime strategy for Portugal can be summarized as follows:

- a) Seaborne trade is important for the economy and sufficient in volume and composition to justify the existence of an adequate national merchant fleet
- b) Regular and reliable shipping services are a must for the import of essential raw materials and the export of important commodities
- c) The country has a good potential to increase foreign trade and its share in transportation of seaborne trade, as a result of the impact derived from the country's entry into the EEC.
- d) The country has an important comparative advantage in crew costs mainly in the context of the EEC.
- e) From statistics shown in Chapter II, in 1985 Portugal spent about 420 million U.S.D.\$ in freights and chartering of foreign vessels which constitutes a strong negative impact on the balance of payments. One way to remedy this situation is in the pursuance of a consistent policy of import substitution and of export promotion of shipping services

- f) The country has a potential for substantial net foreign exchange savings from shipping
- g) The country has an old and inefficient fleet, 94% State-owned, surviving under cargo reservation protection and Governmental subsidies.
- h) The fleet is in a critical situation to face the challenge of open market and free competition as derived from the four regulations approved on 22 December 1986 by the Council of Ministers of the European Community (foundations for a European Shipping policy)
- i) The country has a potential to create effective incentives and generate resources for vessels' acquisition at reasonable terms
- j) The main Portuguese ports are too expensive and non-competitive compared with other major European ports with consequent negative impact on the country's economy (ships will tend to by-pass our ports and mainly the increase of transportation costs affecting the final price of goods imported and exported)
- k) The Portuguese Maritime Administration, including training institutions, have a potential to change from a passive to an active role in the process of creation of a modern and healthy maritime climate
- l) Portugal being a geographically dispersed territory depends upon the development of maritime transport as an essential element of union and of strengthening the national identity.

5.- FORMULATION OF THE STRATEGIC OBJECTIVES

The main objectives to be considered on formulating of a maritime strategy for Portugal are the following:

- a) To create the conditions for the development of a

competitive fleet, capable of carrying a substantial portion of the national seaborne trade and to participate more significantly in other trades mainly that of the EEC

- b) To improve the productivity and efficiency of the Portuguese ports, mainly Lisbon and Leixoes
- c) To promote the development of a healthy maritime climate.

5.1 To create a competitive fleet

To create a competitive fleet is the first and essential objective to consider on formulating a maritime strategy for Portugal.

Actually in a free competition and open market context non-competitive fleets cannot survive, particularly in bulk trade. As Portugal has to abolish the system of cargo reservation and fleet subsidization in accordance with the EEC Regulations, the Portuguese fleet has no other choice but to achieve competitive advantage in the international shipping market as a must to remain active and to develop.

In a Cartesian approach to this problem, as some times has been expressed by shippers, it is of no use to maintain a fleet which is not competitive and the cost of keeping it will mean more charges on the final cost of Portuguese products which would drive them out of the international markets.

Although it is true that economic rationalization imposes the choice of the cheapest transport services and that subsidization cannot be an end in itself, common sense, however, advise some prudence on considering drastic solutions.

We strongly believe that one could not in fact envisage a country like Portugal, with a long maritime history, a dispersed territory linked by sea and with 90% of its external trade carried by maritime transport, without a

national fleet.

Moreover, strong reasons such as national defense and national economic interest, considering the strong negative impact on employment and in a wide-range of other industries which would be deprived from a basic element of support, must necessarily be considered.

Last but not the least, shippers should realize that the disappearance of the fleet would, in the end, limit competition, create a total dependence on foreign shipowners and vulnerability to cost increase, against which they are fighting.

Having said that it is our opinion that we must maintain a sizeable national fleet, but at an acceptable cost. And to ensure an acceptable cost the Portuguese fleet must remain or become competitive.

How we can remain or become competitive ?. That is the question. We do not intend to have the solution. Far from that. But we can add our own contribution to those who agree that something must be done to solve the problem.

5.2 To improve productivity and efficiency of the Portuguese ports

The second strategic objective is to increase the productivity and competitiveness of the Portuguese ports, mainly Lisbon and Leixoes.

Ports are in fact an essential element as a traffic link between the manufacturer on the one hand and the commercial on the other hand. High productivity and effective ports enables a country to reduce the costs of its imports and to increase competitiveness of its exports and vice-versa.

It is of no use for a country to have an efficient and competitive fleet if that advantage is to be lost throughout higher costs of port operations and services.

As it was pointed out in the diagnosis, the Portuguese

ports are some of the most expensive in Europe mainly due to low productivity, which results in slow turn-round of ships, and inefficiency due to overmanning of dock labour force.

To improve this situation is then a crucial task to be assumed by the competent authorities.

5.3 To promote the development of a healthy maritime climate

This is one of the most important objectives for a country intending to succeed as a maritime nation. Shipping depends basically on a wide range of ancillary industries and services. If these do not exist or are not well organized and efficient, shipping does not have the right environment to expand and can hardly find a way out to exist and survive.

In the promotion of such a maritime climate the role of the State is indispensable, considering that:

- . Maritime education and training, which contribute greatly to the existence of a wide-range of skilled manpower, depends upon the State policy
- . The conception and enforcement of the legal maritime framework is a function of the Maritime Administration
- . The shipping policy for the country is a task of the Government
- . Participation in international maritime fora such as IMO, ILO and UNCTAD and the adoption of international conventions is the responsibility of the State.

Therefore depending very much on the "praxis" of the State, "maxima" the Maritime Administration, on understanding the maritime environment and creating the right conditions for its promotion and development, shipping can be successful or suffocated.

FOOTNOTES AND REFERENCES

- 1.- A. CAMACHO/ C.CRUJEIRA/ J.LUCIENA/ I.PINHO, Gestao Publica -UMA ABORDAGEN INTEGRADA; Edited by Editora Portuguesa de Livros Tecnicos e Cientificos, LD., Lisbon, 1982, pg.18.
- 2.- Dictionary of Business and Management; Second Edition by Jerry M. ROSENBERG, published by John Wiley & Sons, pg. 478.
- 3.- Kenneth R. ANDREWS, The Concept of Corporate Strategy; Homewood, Ill: Richard D.Irwing, 1980, pg.18.
- 4.- Graig R. HICKMAN and Michael SILVA, Creating Excellence; UNWIN Paperbacks, London, 1986, pg. 46-48.
- 5.- The analysis is based on a series of the three articles by Eric STAYSETH, published by Shipping News International, No.5,6 and 8, 1985.
- 6.- Webster's Third New Dictionary; Unabridged, pg. 1116.
- 7.- Encyclopedia of Economics; Mc. Graw-Hill Book Company, Inc., pg 525-526.
- 8.- Joseph A.SHUMPETER, Business Cycles; Mc. Graw-Hill Book Company, Inc., pg. 87-102.

CHAPTER V

FORMULATION OF POLICIES TO MEET THE STRATEGIC OBJECTIVES

1.- POLICIES FOR DEVELOPING A COMPETITIVE FLEET

It is important to stress once again that free competition is an unavoidable challenge for Portuguese fleet from 1993 on as derived from Portugal's membership of EEC. Consequently, shipping companies have no way out but to adapt, as best as possible, to face the new situation and to compete not only for the national cargoes but also in cross trades considering the imbalanced feature of our bulk trade.

In this context, the State is reserved the role to set up legal, fiscal, administrative and labour conditions similar to those offered by other Community European Countries but considering, as far as possible, the national interest and assume a maritime developmental attitude.

Having said that, the following policies should be adopted in order to develop a competitive fleet:

- a) to establish an adequate legal framework for the access to shipping activities, including:
 - . technical/operational and economical rules and conditions considered necessary for the development of efficient and competitive shipping
 - . less bureaucracy and simplification of the administrative process involving shipping activities
- b) An immediate research study should be conducted on the following points:
 - . the competitive position of the Portuguese flag vis-a-vis European flags, offshore registers, Norwegian International Register (NIS) and flags of

Convenience (FOC)

- . the position with respect to second-hand vessels and new buildings, taking into consideration the Portuguese comparative advantage of crew costs to match with new technologies and associated capital costs
 - . the benefits obtained by using the "leasing market" i.e. the ability of shipowners to go below the OECD credits terms by adding leasing-deals to the financial package
 - . An annual update to be carried out of the various subsidies and fiscal measures available to shipowners on an international basis.
- c) Based on the conclusions of the aforesaid study to go as far as possible to adjust the Portuguese shipping operational conditions to the most favorable ones with particular emphasis on:
- . fiscal taxation of shipowners and seafarers
 - . depreciation rules (in Portugal the straight line method over 10 years is too penalizing for shipping, compared with flexible methods provided by other countries such as the U.K.).
- d) to implement a program leading to the renewal and modernization of the Portuguese fleet.
- The set up of this program should be connected with the EEC's program for scrapping and building, at present under study, in order to take advantage of the funds provided.
- To implement such a scheme, the two following approaches are suggested:
- . establishment of a ship scrapping fund to reimburse owners with the difference between scrap value and second hand value
 - . setting up a ship scrap guarantee fund. This would enable shipowners to remove ships hypotec/mortgages

from ships they wish to scrap without having to pay back the hypotec/mortgage immediately

- . subsidies to owners for new buildings and/or the purchase of second hand vessels, should be considered, in line with what is being done by other European countries. Examples are the 19.5% subsidy in Holland, 15% in France and 12.5% in West Germany
 - . Special loan facilities to the purchase of new or second hand vessels should be adjusted to those existing in other EEC countries. Examples are Belgium at 15 years 4%, 2 years moratorium; Denmark with 14 years, 5.5%, 4 years moratorium
- e) to establish and activate a National Shipping Committee (NSC) by integrating representatives of shipowners, shippers, Port Administrations, seafarers, dock labour unions and Maritime Administration.
- This Committee should work under the direct responsibility of the Secretary of State in charge of Maritime Affairs (SSMA) and its activities should be, mainly, the following:
- . advisory body of the SSMA, whenever required (passive role)
 - . elaborate proposals to the SSMA, relating to the improvement, development and promotion of maritime activities (active role)
 - . to promote a mutual understanding climate among members to shipping and port benefits
- f) Privatization of public capital of shipping enterprises in order to reduce or eliminate the negative impact of statization in shipping
- g) to implement effective rules concerning the safety manning of Portuguese ships

By safety manning it is meant, here, a minimum work

force tailored both in size and qualifications to perform all the functions and duties necessary for a safe running of a ship. For this purpose clear and effective regulations must be set up and the following aspects must be included:

- . the evaluation of safe manning must take into consideration the technical standard of the ships, the effect of the mechanical propulsion, administrative and organizational arrangements, alternations, job combinations, tonnage, trade areas and working hours arrangements to be applied in each case
- . the manning determined shall enable a proper performance of the following tasks:
 - watchkeeping at sea and in port for the deck and engine departments
 - use and survey of life-saving and fire-fighting equipment, compulsory drills included
 - use operational/technical survey and inspection of machinery, automation, supervision and control systems.
 - use operational/technical survey and control of navigational equipment and communication installations
 - mooring of the ship
 - catering requirements of the crew
 - supervise loading and securing of the cargo with regard to stability, trim, fire, pollution, etc.
 - required cleaning
 - other safety operations
- . questions relating to additional manning should be settled by the master in agreement with the owners. However "Direccao General do Pessoal do Mar e Estudos Nauticos" must be informed for technical control reasons

- h) to conceive and implement a general legal framework defining clearly the principles and rules governing the exercise of the maritime activity including the applicable incentives
- i) Revision of the Maritime Commercial Law and creation of Maritime Courts.

2.- POLICIES FOR CREATING A HEALTHY MARITIME CLIMATE

Although many factors contribute to the existence of a healthy maritime climate, there are two main pivotal areas under the States' responsibility which must be considered: Maritime Education and Training and the Maritime Administration.

2.1 Maritime Education and Training (MET)

The creation and development of a shipping industry and services in a country, depend basically on the expertise available to effectively fulfill the needs of the maritime sector.

In providing such expertise maritime education and training institutions play an irreplaceable role

In order to improve this role considering the Portuguese situation as described before, some adjustments are suggested as per the next point.

2.1.1 Introduction

With the increased use of technology and smaller crews on board ships, it is essential that the education and training of the personnel to man these ships adequately equip them for safe and efficient operations.

Maritime education and training in countries with a well-developed maritime and educational infrastructure has become janus-faced by serving both ship and shore. The attitude to seafaring has undergone changes. It has helped

to develop an increased shore-orientation of the MET.

The issue for the majority of seafarers is not whether to leave the sea but when. The fluctuation and the labour turnover from ship to shore has been accepted. To channel it into the maritime industry should be one of the future tasks of MET and the maritime and education authorities.

Seafarers, into whose education and training considerable investments are made by the State, should be enabled to find useful occupation in the maritime industry after having decided to leave the sea. This should be achieved if seafarers would make their valuable shipboard experience available to shipping companies, to ports, to cargo handling operators, to shipyard, and of course in Maritime Administration, pilotage, marine superintendency, etc.

Taking this into consideration MET will have to adapt to the new role of education and training for a certificate of competency and an academic degree and come closer to land-based education and training.

It is part of this development that MET institutions have become departments of a greater education and training units as, e.g. a Polytechnic School or a University.

However reasonable changes in acceptable periods of time and the maintaining of a basic continuity require a close cooperation between shipping companies, maritime and educational authorities and MET institutions.

Present curricula will have to be constantly revised. The knowledge-oriented subjects will in general become more technical than before, but will also have to comprise economic and business subjects. Methodology oriented subjects will have to be introduced. The time spent for basic science subjects may have to be increased. A number of subjects can be taught more effectively by the use of modern teaching equipment, such as audiovisual aids, computers and simulators.

To keep up with the technological developments and without minimizing the training of the engineer officer, a

special emphasis should be put on the education of the deck-officer, especially the captain.

In fact, he is by law the responsible person for the success of the maritime adventure, moreover, his experience on board of ships as specialist in navigation, ship handling and cargo operations makes of him not only a ship's manager but also the indicated person for special duties and assignments ashore, such as pilot, port operator and administrator, inspector of ships, superintendent, head of the freight department, etc.

When considering a ship as a maritime socio-economic element, there is a close relationship between commercial law, maritime law and labour law, navigation and ship technique, shipboard management and administration. On the other hand, in his function of coordinator of different departments, the captain is in need of a thorough basic knowledge of sociology and psychology, in order to solve problems caused by living in a closed community and human relationship.

In order to cope with this maritime socio-economic evolution, the traditional way of training, essentially oriented to command a ship, has to be changed.

Training institutions are very high cost organization. This is particularly evident during shipping crisis in which need for training is very low considering the real availability of jobs. Consequently, problems of overcapacity and low productivity are likely to occur.

In order to maximize the use of such resources, training institutions should be open to the maritime milieu providing specific courses for shipping and ancillary industries and get more involved in research in close cooperation with the maritime industry and related activities.

A new type of teacher, lecturer or professor will have to emerge who is able to implement future-oriented education and training programmes. Teaching staff solely holding

master mariner or chief engineer qualifications may remain on the instructor's level, whereas maritime professionals with additional academic credentials and industry experience not restricted to shipboard service are forming the new cadres of teaching staff in higher maritime education and training institutions. The question has to be put whether all present teaching staff will be able to cope with future requirements and whether they will not hamper the development of the future MET. In any case better qualified teaching staff requires a permanent actualization and training in close connection with the technical developments and industry needs.

As far as ratings are concerned the recent situation and future trends of technical developments of ships and organization of work on board tend to equalize the number of ratings to the number of officers due to crew reduction. This implies the need for less but better qualified ratings and consequently the improvement of the recruitment conditions and training provided.

2.1.2 Policies

The main policies to suggest for the improvement of the Maritime Education and Training in Portugal, considering the present situation and what have been said in the introduction, can be summarized as follows:

a) NAUTICAL ACADEMY "INFANTE D. HENRIQUE"

- Renewal of curricula of general courses on the one hand in respect of new developments and future trends in ships navigation, machine and operations technology, and on the other hand to create a wide variety of perspectives for officers by ensuring training which can allow them to successfully exercise a profession, first at sea, later ashore in careers related directly to his nautical training in case family, psychological or physical

needs should oblige them to abandon the sea.

- . Renewal of curricula of complementary courses aiming to a proper preparation of the officers for leadership functions in line with what was said in the previous point.

For this purpose the following subjects should be considered to be included in the curriculum:

- Psychology
- Logics
- Deontology
- Synergy

- Civil, Commercial and Maritime Law
- Economy (General, International, Transport)
- Ship operation
- Statistics
- Data processing
- Port economy and organization
- . The new curricula to adopt should fully meet the requirements of the Ministry of Education so that, an adequate degree could be granted
- . Open the School to the Maritime "milieu" by providing tailor-made short duration courses for example on ship agency, ship forwarding, port operations, etc.
- . Cooperation in research programmes with the shipping industry and other departments of the Maritime Administration. Realization of Seminars, colloquia, debates, etc., on matters of interest for shipping in general and for education and training in particular
- . Strengthen cooperation and mutual change of information with similar foreign institutions
- . Increase the requirements (qualification and

experience) for recruitment of professors in accordance with the suggested new orientation

- . Introduce a deep-sea fishing course to specialize nautical officers intending to follow a fishing career. For such specialization the following subject should be considered:
 - Maritime law and fishing law
 - Technological materials
 - Raw materials in fishing
 - Theory and design of fishing gear
 - Fish location
 - Technological employment of fishing systems
 - Technological planning of fishing
 - Technology of fishing processing

b) RATINGS' SCHOOL

- . Revise the curricula of the present courses (seaman, motorman, steward) to meet the requirements of present development and future trends of ships' technology and organization of work on board, parallel with what is being done by other European countries
- . English language should be included in every course available considering that Portuguese ratings can compete for jobs in foreign vessels particularly in EEC fleets taking advantage of being EEC citizens
- . Improvement of recruitment basic conditions as follows:
 - physical and psychological aptitude of the candidates
 - positive evidence of good moral character
 - minimum 6 years basic education
 - real availability of jobs

- c) Both institutions should promote frequent short duration courses and, in the case of Ratings School, professional re-orientation courses.

2.1.3 Maritime Administration

Maritime Administration is a pivotal element in the regulatory and developmental process of the maritime sector of a country

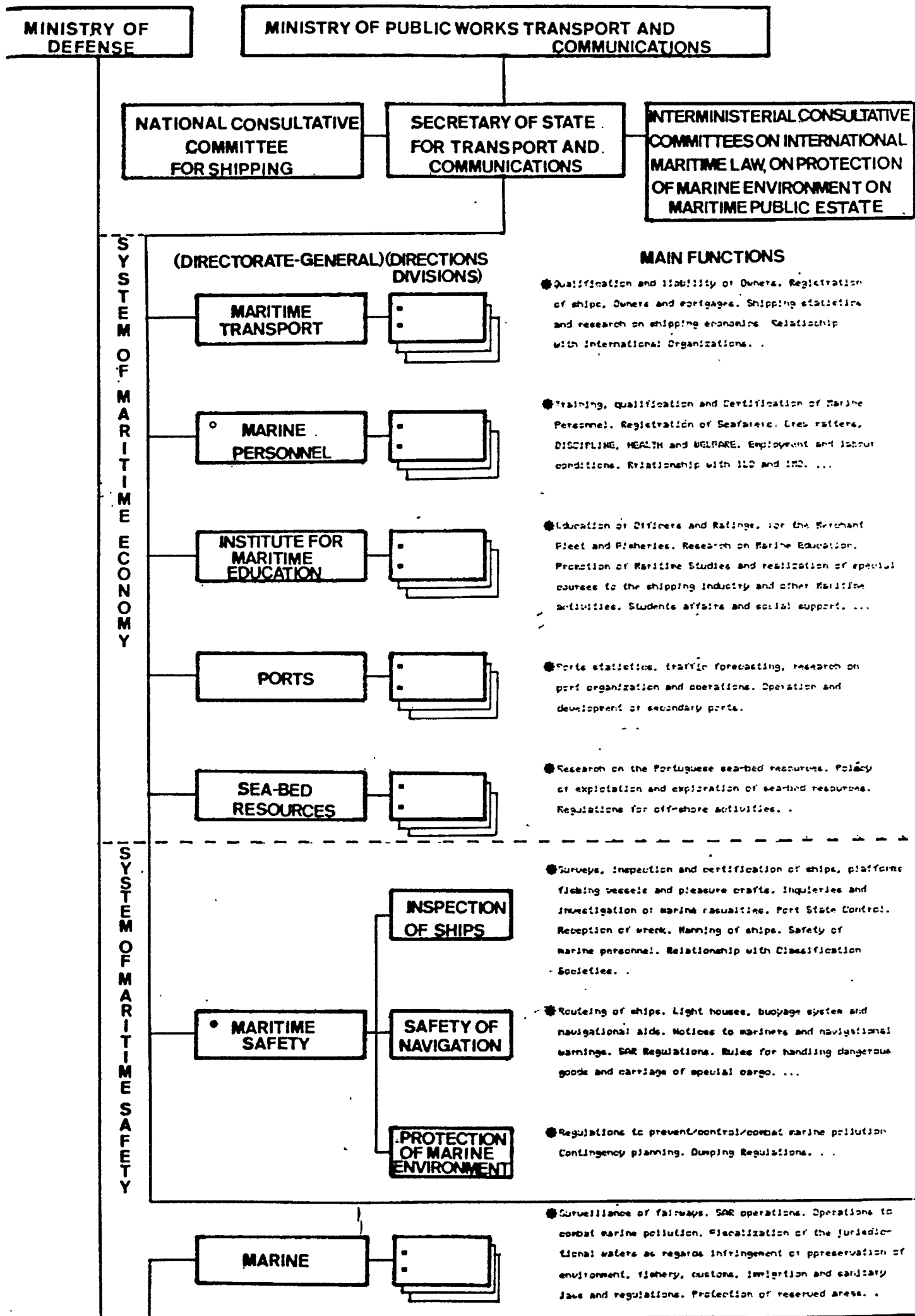
Actually, it plays a crucial role in the emerging and flourishing of maritime activities, the ability to deal efficiently and effectively with maritime matters, the adherence and implementation of international standards of maritime safety, and the prevention of marine pollution.

For the Portuguese Maritime Administration faced with the problems stressed earlier, to cope with this role an utmost effort is necessary to rationalize organizations, to modernize structures and specialize personnel in order to ensure better management, to reduce bureaucracy and to achieve more developed patterns on maritime administration.

Taking all this into consideration the main policy for the Portuguese Maritime Administration should be its deep reorganization, aiming to:

- . Rationalization and modernization of functions and responsibilities
- . Development of efficient and effective systems of maritime economy and maritime safety

For this purpose an adequate organization and structure must be set up, as suggested in the following chart:



Compared with the existing organization (see Chapter II) this new approach means a deep but modernized developmental change. In fact, it enables not only to overcome the significant existing bottlenecks but also to adjust the State's role to the features of modern shipping and in particular to the new situation derived from membership in the EEC. Also to progress into the knowledge, protection, exploitation and exploration of our sea-bed resources and our immense Economic Exclusive Zone, in the context of the United Nations Conference on the Law of the Sea (UNCLOS III).

Last but not the least to contribute to safety navigation and face the challenge of protecting our marine environment which is an enormous dimension area with a traffic density instantly estimated at 400 ships and through which about 50% of the oil transported yearly by sea, is carried out.

Such a structure does not mean an increase of the Maritime Administration costs or the State's intervention on the maritime sector. Because it is based more on reorganization and rationalization than in new services, i.e. it involves more quality than quantity. At the same time simplicity and rapidity can be achieved through the utilization of modern methods and the advantage of having an integrated but decentralized system.

The complexity of shipping with the particularity of being an international industry with the associated problems, and maritime matters such as sea-bed resources and protection of marine environment require not only an adequate organization of the Maritime Administration but also highly skilled advisory staff in formulating and implementing policies and decisions. This was the basic reason for suggesting the creation of specific national and Inter-Ministerial Consultative Committees of the Secretary of

State in charge of maritime affairs.

Considering that there are three training institutions: Nautical Academy, Ratings School and Fisheries School, which involve two Ministries (Public Works, Transport and Communications, and Agriculture) and imply three management staff, three un-articulated ways of education and naturally some overlapping of equipment and resources, the creation of an Institute for Maritime Education should be suggested. This Institute should coordinate the three institutions, rationalizing activities and methods, harmonizing curricula and careers and economizing resources.

Maritime Safety is one of the most important duties and responsibilities of a Maritime Administration. This is particularly relevant in the case of Portugal due to the particular high risk of accidents and pollution of our coasts, and the obligations derived from the ratification of pertinent International Conventions and Instruments such as the Memorandum of Understanding on Port State Control (MOU). As described before the existing organization of the maritime safety is far from being efficient and effective.

To illustrate it is enough to refer to the fact that Portugal has the second worse performance of all the MOU's countries with 6% out of the 25% obligatory inspections laid down in the Memorandum.

We could not help but to draw the attention to these facts, although very briefly described, to justify the need for a Maritime Safety General Directorate, duly organized and equipped, under the responsibility of a civil Ministry in charge of Maritime Affairs as it is the rule in other European countries.

The Navy through the General Directorate of Marine Affairs should essentially be in charge of the fiscalization of the Portuguese jurisdictional waters, search and rescue operations and other emergency operations in liaison with the national contingency plan system.

In this context the Captaincies of Ports should progressively pass to the control of the Ministry in charge of Maritime Affairs. Or, alternatively, it could create its own regional dependencies to cover its executive needs and to give form to a coherent, uniform, and homogeneous process of an effective decentralized administration.

Certainly it cannot be done overnight all the more so when important factors of inertia and resistance to change do exist and must be considered. However, the objective can be achieved by successive approximations, during a planned transitory period.

Finally, it must be considered that with the political stability presently existing in Portugal the necessary conditions exist to undertake the structural reforms needed to bring the country up to the level of its European partners.

2.1.4 Employment and Social Conditions

The policies suggested as regards employment and social conditions of the Portuguese seafarers, are the following:

- a) To implement a manpower planning system by forecasting both quantitatively and qualitatively manpower needs of the enterprises in relation to current and anticipated business needs resulting from internal and external changing conditions. This system will enable to supply the demand with the needed qualified personnel at the right time and to achieve a tendencial equilibrium of the labour market. At the same time this policy will meet the requirements of ILO recommendations concerning employment problems arising from technical developments on board ships (Recommendation No.139). An essential pre-requisite to implement the system is to adjust the present regulations in order to make

compulsory for all seafarers the need for an adequate maritime course to be registered and obtain the irrespective seamen's book.

Recruitment to attend such courses should be taken of the existing manpower plan.

- b) Create the necessary conditions to promote employment for Portuguese seafarers both in the country and abroad. For this purpose the following main conditions should be considered:

- . Ratification and implementation of ILO Convention No.9 concerning the establishment of facilities for finding employment for seamen
- . Liberalization of the existing requirements for Portuguese seafarers to be employed on foreign ships
- . Institutionalization of cooperation between "DGP MEN" and the appropriate agencies of the Ministry of Work in order to provide help for unemployed seafarers seeking employment on shore based activities, including professional reconverting courses

- c) To ratify and/or enforce relevant standards and recommendations precognized by ILO for seafarers

3.- POLICIES FOR PORTS

3.1 Introduction

Quoting Frankel (1) "The primary function of a port is to provide for efficient, low-cost, inter and intra-model transfer; inspection, storage form change and control cargo. For this purpose, the port must be able effectively to accommodate ships and other transport vehicles interfacing at the port. It should act as an integral part of a chain of

transport links designed to move cargoes from origin to destination"...

As referred by Stuchtey (2) "over the last 25 years very significant changes have taken place in world shipping. The size of the ships has increased considerably and this will continue also in the future. But more obvious will be the change in the structure of the world liner tonnage which will take place and which has already taken place in the last 10 years. There is a clear trend in liner shipping away from the conventional liner, which can be used universally, towards new systems where the cargo is unitized either in containers, or trailers, in LASH-barges (lighter aboard ship system, barges with a capacity of approximately 400 dwt. are transported on a motor vessel), in unit loads,, etc. These structural changes were the result of studies on intermodal transport systems by the world shipping experts"

Containerization has become the most important of all the competing intermodal transport systems.

A study made to analyse the degree of containerization for the next ten years, shows that 60-70% of all general cargo will be containerized for the ports in the Hamburg-Le Havre-range (3).

As a consequence the modernization and adjustment of ports to a new era of intermodal transport is a must, considering that economics of highly sophisticated and extremely high daily costs vessels, depend very much on a quick turn-round in ports.

Then, ports have to achieve a high rate of rationalization by means of improved and highly specialized systems and technologies.

Less but highly qualified dock labour is necessary for efficient use of high technology equipment; better organization and management is indispensable; port services, such as customs, must be modernized to avoid delays; adequate

port lay out and efficient road-rail connections to the port hinterland, is essential.

3.2 Policies suggested for the Portuguese main ports

The reference to the main ports is only due to the fact that they are responsible for 90% of the ports' total traffic at the same time as for the bigger problems.

Considering the diagnosis described in Chapter II, No. 6.7.- the policies suggested for the Portuguese main ports can be summarized as follows:

- a) To solve the problem of excessive dock labour.

It is the most important measure to be taken in order to increase work productivity and ports' competitiveness.

However, State and port operators must be ready to bear the high costs of workers' indemnity claims that this solution involves

- b) Identify the needs for training at management and operations levels and implement adequate training courses

Good practical training schemes are the key to better management, better labour performance and improved ship output.

At dock labour level it is important to stress that high gang output and good labour relations are normally dependent on:

- . sound selection and promotion policies
- . effective training schemes
- . sensible working hours
- . good working conditions
- . attractive incentives

- c) To reduce or even eliminate the State intervention in the organization of port work force

Compared with the other EEC countries (4) Portugal is a unique case of considerable State intervention

in the recruiting, organization, administration and training of dock labour force.

All the other countries with a slight difference in the case of Greece leave to the employers and the employees the organization and the resolution of matters related with the relations and conditions of work.

- d) To promote modernization and automation of cargo-handling process and equipment in line with other European ports
- e) To create the necessary conditions for facilitation of traffic through a simplification of requirements and efficiency of services of the various public entities involved in the ports' activities
- f) To formulate a port pricing strategy on considering the following factors:
 - . the objectives of the port
 - . the cost of the port of providing the service or resource
 - . the benefits obtained by users in the use of the port
 - . the competition faced by the port from other ports
 - . the competition that port user face
- g) To promote the development of transport infrastructures network between the ports and their hinterlands.

FOOTNOTES AND REFERENCES

- 1.- Ernst G. FRANKEL, Port Planning and Development;
Wiley-Interscience Publication, John Willey & Sons, New
York.
- 2.- R.W.STUCHTEY, Port Management Textbook; Institute of
Shipping and Logistics, Bremen, 1985, pg.53.
- 3.- As mentioned by Stuchtey, op. cit.
- 4.- Commission of the European Communities, Report of an
Inquiry into the Current Situation in the Major Community
Sea Ports; 1986.

CHAPTER VI

CONCLUSIONS AND SUGGESTIONS

1.-ON THE PRESENT SITUATION OF THE PORTUGUESE MARITIME SECTOR

- a.- The discontinuity of the territory, the dependence on maritime transport for more than 90% of the imports and 80% of the exports characterizes Portugal similarly to an insular country. Then, there is room for a national merchant fleet to exist and basic conditions to be developed.
- b.- The Portuguese Merchant Fleet, excluding tankers, is too old, insufficient and inadequate for the carriage of significant part of the country's seaborne trade, consequently:
- c.- The amount of foreign currency spent on freights chartered in tonnage and leasings has increased sharply during the last seven years, amounting to \$420 million in 1985. Therefore, the negative impact on the Balance of Payments, is obviously, important enough to worry about. All the more so when, this situation is not likely to improve significantly in the near future.
- d.- The maritime personnel is abundant, skilled enough to the present needs of the fleet and relatively inexpensive compared with those of the other EEC countries. However, there is a need for improving the maritime education and training, considering the current and foreseen technological developments in shipping and other shore based ancillary industries. At the same time the competitiveness

of the Portuguese crew has a good potential to improve if, for example, tax and social security contributions were reduced to a level in line with other EEC countries.

- e.- The Portuguese ports, mainly Lisbon and Leixoes are too expensive and not competitive in relation with other European countries namely, due to overmanning of dock labour force which constitutes a critical bottleneck in the country's maritime transport system.
- f.- The Maritime Education is scattered to three institutions under the control of two different Ministries, which leads to lack of harmonization of teaching and careers, and inefficient use of resources.
- g.- The Portuguese Maritime Administration is in general too bureaucratized, not properly organized and ruled by some out-dated organic laws and regulations, which result in low efficiency and low effectiveness.
- h.- The existing legal framework is not in line with the present needs of the shipping activities.

2.-ON THE MAIN TRENDS FOR SHIPPING ACTIVITIES

On this matter the following aspects have been found :

- a.- Maritime countries with high crew costs are losing comparative advantage which implies increasing tendencies to:
 - . flag out
 - . create off-shore registers
 - . develop new technologies to save costs of energy and crew
 - . reduce manning
 - . improve management

- b.- Safety of life at sea and the protection of the marine environment will continue to merit increasing attention of the maritime nations and consequently new systems will be introduced, oriented to achieve more efficient ship operation, more safety, cleaner oceans and more human care.
- c.- Education and training will be guided towards the needs of lower but highly qualified crews and new forms of organization of work on board.
- d.- Ports will continue to develop towards adjustment to the needs of the various trades and types of vessels with the aim to:
- . be an efficient and effective link of the overall transport system
 - . provide wider and more sophisticated services such as: special warehousing, canvassing, management of stocks, receiving and supplying orders, etc.
 - . parallelism modernize port equipment and work methods based on well defined EDP systems and reduced but highly skilled port operation personnel resulting in higher productivity of port performance
- e.- The common shipping policy of the EEC will progress on the basis of free trade within the Community and it will be guided by the UNCTAD Code for Liner Conferences complemented by the "Brussels Package" in liner trade relations with third countries. Further efforts will be made to keep ships under Community flags by creating conditions to re-gain comparative advantage.
- Measures to reduce over-tonnage will be taken and at an internal level a scheme of incentives for scrapping will probably be implemented.
- Maritime safety and maritime fraud will be duly

considered with special emphasis to strengthen the role of the Memorandum of Understanding on Port State Control.

3.- SUGGESTIONS

The main suggestions, as derived from what was said in Chapters IV and V, can be summarized as follows:

- a.- To create the necessary conditions for the development of a competitive fleet capable of carrying a substantial portion of the national seaborne trade and to expand to cross-trades.

And in order to achieve this objective, the following is suggested:

- . to adjust the legal framework to the real needs of modern shipping
- . to provide effective financial assistance to ship scrapping and ship acquisition
- . to go as far as possible to reduce taxation of shipowners and seafarers to levels in line with other European countries
- . to reduce intervention of the State in shipping activities through shipping regulations and to implement a simple and effective administrative process adjusted to the specific needs of shipping business
- . to promote the institutionalization of a committee for shipping, integrating: shipowners, shippers, port operators, relevant trade unions and maritime administration.
- . to take the necessary measures to improve ports productivity and competitiveness.

b.- To promote the development of a healthy maritime climate, which implies:

- . modernization, rationalization and adjustment of the maritime education and training in order to meet the needs of the merchant and fishing fleets and other shore-based maritime activities
- . reorganization and modernization of the Portuguese Maritime Administration in order to cope with the needs for the development of the maritime sector and, in specially aiming at:
 - . achieving a high level of efficiency and effectiveness
 - . properly covering the important areas of safety of navigation, marine environment, sea-bed resources and the fiscalization of the Portuguese jurisdictional waters
 - . actively participating in international maritime fora

BIBLIOGRAPHY

1. ALDERTON, P.M., Sea Transport Operation and Economics; Second edition, 1980, Thomas Reed Publications Limited, London.
2. ANSOFF, H.I., DECLERCK, R.P. and HAYES, R.L., From Strategic Planning to Strategic Management; published by John Wiley & Sons, New York.
3. BENNISON, Malcolm and CASSON Jonathan, The Manpower Planning Handbook; McGraw-Hill Company (UK) Limited London, 1983.
4. CHRZANOWSKI, Ignacy, An Introduction to Shipping to Shipping Economics; edited by S.J. Wlater, City of London Polytechnic, Fairplay Publications, 1985
5. FRANKEL, Ernst G., Port Planning and Development; Wiley-Interscience Publication, John Wiley and Sons, New York, 1987.
6. GRAY, Peter, Free Trade or Protection - A Pragmatic Analyses; The Macmillian Press, Ltd., London, 1985
7. HICKMAN, Graig R. and SILVA, Michael, Creating Excellence; UNWIN Paperbacks, London, 1985.
8. INSTITUTE OF SHIPPING AND LOGISTICS, Bremen; Port Management Textbook - Containerization; Book No.10, edited by Hans Ludwig BETH, Bremen, 1985.

9. KENDALL, L.C., The Business of Shipping, 5 edition,
Cornell Maritime Press, Centreville, Maryland.

10. SCUMPETER, Joseph A., Business Cycles, Mc.Graw-
-Hill Book Company, Inc., 1939.

11. SMITH, John Grieve, Strategic Planning in National
Industries; The Macmillian Press, Ltd., London.

A N N E X I

(TABLES 1 - 4)

TABLE 1

MARITIME ACCESS CHANNELS			
MemberState	Cost of Investment	Cost of Maintenance	Remarks
BELGIUM	100% National Gov.	100% National Gov.	
DENMARK	100%PortAuthority	100%PortAuthority	
GERMANY	100%Fed.Government outside port 100%rel.territorial Auth.within the port	100%Fed.Government outside port 100%rel.territorial Auth.within theport	
FRANCE			
Autonomous	80% Nat. Government 20%PortAuthority	) ) 100% National Gov.	
Non-Aut. Ports	20-50Nat.Government Balance Chamber of Commerce))	
IRELAND	100%PortAuthority	100%PortAuthority	
ITALY			
Autonomous	Nat.Government + PortAth.in varying proportions	Varies but in general the Nat.Government	
State Ports	80% Nat. Government	100% Nat. Government	
NETHERLANDS			
Haven- bredrijven	2/3Nat.Goverment 1/3Havrenbredrijf (Rott.) or Munic. (Amsterdam)	) ) )100% Nat.Government	Havendrijf entire initiancost accesschan- nel forship drawing over 57'
Havens- chappen	100%Nat.Government)	
G.BRITAIN	100%PortAuthority	100%PortAuthority	
GREECE	100%Nat.Government	100%Local Government	Local Prefec tural Fund
PORTUGAL	100%Nat.Government	100%PortAuthority	
SPAIN	100%PortAuthority	100%PortAuthority	Sometimes Gov.assist. (grants)

TABLE 2

LIGHTS, BUOYS AND NAVIGATIONAID AIDS			
MemberState		Cost of Investment	Cost of Maintenance
BELGIUM	outside port	100%Nat.Government	100%Nat.Government
	inside port	100%Munic/Authority	100%Munic/Authority
DENMARK	outside port	100%Munic/Authority	100%Munic/Authority
	inside port	100%Port Authority	100% Port Authority
GERMANY	outside port	100%Fed.Government	100%Fed.Government
	inside port	100%rel.Terr.Auth.	100%rel.Terr.Auth.
FRANCE			
Autonomous	outside port	100% Nat.Government)
	inside port	60-80%Nat.Government)
Non-Aut. Ports		BalancePortAuthority)
	outside port	100%Nat.Government	) 100%Nat.Government
	inside port	30-50% Nat. Gov.)
IRELAND		BalanceCh.ofCommerce)
	outside port	100%Commissioners of Irish Lights (1)	100%Commissioners of Irish Lights
	inside port	100% Port Authority	100% Port Authority
ITALY	outside port	)100Nat.Government	)100%Nat.Government
	inside port))
NETHERLANDS			
Havenbe- drijven		)100%Nat.Government	)100%Nat.Government
		)outside port-posit.	)outs.port-varying
Haven- shappen		)within port vary	)responsibility
		)from port to port	)within the port
G.BRITAIN	outside port	Mostly T.House (2) sometimes PortAuth. or similar body	MostlyTrinity House sometimes Port Auth. or similar body
	inside port	100%Port Authority	100%Port Authority
GREECE		100% Port Authority	100% Navy
PORTUGAL		100% Navy	100% Naby
SPAIN		100% Nat.Government	100%Port Authority

(1)A statutory organization responsible for all navigationa aids around the cost of Ireland (port authorities are responsible)

(2)Trinity House is a non-statutory private guild responsible for the pilotage in the Thames estuary and other ports/lighthouses.

TABLE 3

SEA LOCKS AND EXTERIOR BREAKWATERS			
MemberState		Cost of Investment	Cost of Maintenance
BELGIUM	locks	100%Nat. Government	100%Munic/Authority
	breakwaters	100%	100% Authority
DENMARK	locks	100%Port Authority	100%Port Authority
	breakwaters	100%	100%
GERMANY	locks	)Lander and Communes	)Lander and Communes
	breakwaters))
FRANCE			
Autonomous	locks	80%Nat. Government)
	breakwaters	20%Port Authority)
Non-Aut. Ports	locks	30-50Nat. Government	)100%Nat. Government
	breakwaters	Balance Ch. Commerce)
IRELAND	locks	100%)Port Authority	)100% Port Authority
	breakwaters	100%)
ITALY			
Autonomous	breakwaters	National Government and Port Auth. in varying proportions	varies but in general Nat. Government pays
State Ports	breakwaters	80%Nat. Government 20%Communes+Prov.	100%Nat. Government
NETHERLANDS			
Haven-bedrijven	locks	2/3 Nat. Government)
		1/3Munic. (Amst. only))
	breakwaters	2/3Nat. Government 1/3Munic. (Amst.) or Havenbedrijf (Rott.)	)100%Nat. Government))
Haven-chappen	locks	)varies port to port	)varies port to port
	breakwaters))
G. BRITAIN	locks	100%)Port Authority	)100%Port Authority
	breakwaters	100%))
GREECE	locks	100%Nat. Government	100%Nat. or Local Gov.
PORTUGAL		100%Nat. Government	100%Port Authority
SPAIN		100% Port Authority	100%Port Authority

TABLE 4

DOCKS, QUAYS, RECLAIMED LAND, ETC.			
MemberState	Cost of Investment	Cost of Maintenance	Remark
BELGIUM	60-100%National Gov. BalanceMunicipality/	100%Municipality/ Authority	AtGenoathis fig.isfixed at100.Lire by 1962 Law
DENMARK	100%Port Authority	100%PortAuthority	
GERMANY	100%Land or Comune	100%PortAuthority	
FRANCE			
Autonomous Ports	Docks, quays, etc. 60% Government, 40%Port Authority. Reclaimed Land-each case treated separately	100%PortAuthority	
Non-Aut. Ports	30-50%National Gov. Balance Chamber of Commerce	National Government Chamber of Commerce in varying ports	
IRELAND	100%PortAuthority	100%PortAuthority	
ITALY	National Government and PortAuthority in varying proportions	PortAuthority with an annual contribu- tionFromtheState	
Autonomous Ports			
Non-Aut. Ports	80% National Gov. 20% Communes + Provinces	100% National Gov.	
NETHERLANDS			
Havedrijven	100%PortAuthority	100%PortAuthority	
Havens- chapren	Coast shared by Port Authority,	Cost shared by Port Authority,	
G. BRITAIN	100%PortAuthority	100%PortAuthority	
GREECE	100%PortAuthority	100% National or Local Government	
PORTUGAL			
Port. Adm.	Usually 100%PortAut.	) 100%Port Aut.
Autonomous Port Board	Usually 100%Central Government)	
SPAIN	100%PortAuthority	100%PortAuthority	

ANNEX II

(TABLES 1 - 2)

ALL SHIPS: TOTALLY LOST: 1979-1985

FLAG	1979		1980		1981		1982		1983		1984		1985	
	No.	Gross Tonnage	No.	Gross Tonnage	No.	Gross Tonnage	No.	Gross Tonnage	No.	Gross Tonnage	No.	Gross Tonnage	No.	Gross Tonnage
ARGENTINA	1	11,577	5	14,405	...	...	3	3,122	...	...	1	442	1	2,122
AUSTRALIA	2	381	1	186	4	831	2	1,265	1	141	1	138	1	124
BELGIUM	1	150	...	...	...	...	4	3,728	...	...	...	...	1	199
BRAZIL	2	7,789	1	12,044	2	10,429	...	...	...	...	2	6,466	2	8,395
CANADA	8	8,355	6	6,826	3	2,011	8	11,513	3	2,437	4	1,541	2	726
CHINA, PEOPLE'S REP. OF TAIWAN, PROVINCE OF }	9	16,633	9	1,710	11	27,544	11	84,268	8	44,601	11	10,449	9	23,252
CYPRUS	28	65,093	17	41,054	9	11,822	18	77,903	9	39,614	10	243,285	13	177,804
DENMARK	7	4,329	7	2,979	8	2,142	2	279	7	2,002	6	3,355	2	857
FINLAND	1	4,982	...	...	2	763	...	...	...	...	1	1,323	1	499
FRANCE	7	76,865	2	729	2	4,641	...	...	3	447	4	5,644	3	458
GERMAN DEM. REP.	...	...	...	...	...	...	...	...	...	...	2	27,389	1	1,743
GERMANY, FED. REP. OF	10	4,282	6	2,620	9	20,128	1	119	5	6,324	5	2,179	3	5,020
GREECE	67	511,359	39	327,161	55	412,107	49	352,822	38	418,173	21	480,115	20	342,828
HONG KONG	...	...	...	...	...	...	1	139	...	...	2	41,238	...	...
INDIA	5	16,446	6	18,680	1	9,460	2	10,050	1	2,939	2	39,741	4	33,969
INDONESIA	4	22,098	8	8,077	8	33,502	6	4,148	8	8,323	4	5,052	1	499
ITALY	14	53,886	10	64,195	6	49,137	11	43,401	6	3,607	8	21,196	7	6,994
JAPAN	22	63,418	46	55,518	29	37,256	42	16,990	26	9,872	47	13,890	46	19,181
KOREA (SOUTH)	36	32,667	21	127,840	12	30,617	20	27,644	14	43,377	11	20,965	17	89,699
KUWAIT	2	2,054	2	950	1	291	1	398	...	...	1	1,597	1	1,501
LIBERIA	16	693,849	12	516,534	7	139,101	6	212,493	7	174,458	10	424,300	6	107,251
MEXICO	2	5,849	1	955	1	663	5	34,947	3	4,269	1	113,531	5	46,983
NETHERLANDS	1	151	2	8,766	4	11,862	5	4,297	...	...	1	5,146	1	125
NORWAY	11	2,849	11	5,329	10	2,892	7	12,983	10	16,259	6	115,549	4	829
PANAMA	79	272,729	46	142,190	65	199,354	70	292,855	63	341,746	49	231,123	46	295,895
PHILIPPINES	5	18,261	10	49,473	8	11,085	8	4,737	8	22,041	8	8,318	7	13,307
POLAND	5	24,191	...	...	1	8,679	1	827	1	1,891	2	8,750	1	1,974
PORTUGAL	4	2,726	5	7,804	1	424	3	2,881	...	...	1	803	...	...
SAUDI ARABIA	1	1,454	3	11,005	...	...	5	68,256	1	10,041	2	244,153	1	492
SINGAPORE	7	35,559	3	19,330	6	24,288	5	17,371	3	11,836	3	10,867	2	3,575
SPAIN	14	27,895	17	138,186	8	2,846	9	6,142	14	151,010	18	11,687	7	13,032
SWEDEN	...	...	...	...	2	598	...	...	1	500	1	349	1	500
TURKEY	3	15,709	6	3,833	2	4,755	4	14,796	2	775	...	...	5	118,211
U.S.S.R.	2	1,826	...	...	1	5,823	3	8,069	3	6,912	3	43,623	1	10,944
UNITED KINGDOM	12	7,458	8	108,587	9	12,495	10	23,655	9	10,292	7	28,907	8	3,818
UNITED STATES OF AMERICA	29	16,404	27	25,066	11	3,444	32	72,245	24	34,753	18	64,510	14	10,979
YUGOSLAVIA	4	20,010	2	15,805	3	12,203	2	1,445	...	...	5	36,034	1	12,162
OTHER COUNTRIES	44	170,975	47	65,180	57	144,957	47	206,041	62	103,871	49	80,286	62	295,263
WORLD TOTAL	486	2,210,259	387	1,804,027	369	1,238,250	402	1,631,830	340	1,472,611	327	2,353,941	307	1,651,210

SOURCE: Lloyd's Register of Shipping, Statistical Tables, 1986

ALL SHIPS: BROKEN UP 1979-1985

FLAG	1979		1980		1981		1982		1983		1984		1985	
	No.	Gross Tonnage	No.	Gross Tonnage	No.	Gross Tonnage	No.	Gross Tonnage	No.	Gross Tonnage	No.	Gross Tonnage	No.	Gross Tonnage
ARGENTINA	...	...	7	87,413	4	51,877	6	45,932	8	74,776	5	40,158	8	47,335
AUSTRALIA	2	44,079	3	12,763	2	1,288	2	34,466	1	23,262	4	24,602	5	76,690
BELGIUM	...	...	...	...	...	...	2	1,306	1	47,476	2	39,943	3	16,829
BRAZIL	2	8,185	1	2,614	...	...	3	17,698	4	29,750	13	66,857	13	65,075
CANADA	4	28,719	4	14,329	9	49,349	1	178	7	37,050	11	106,720	26	137,209
CHINA, PEOPLE'S REP. OF TAIWAN, PROVINCE OF	6	102,762	4	16,106	4	22,566	9	160,447	6	66,681	18	696,921	32	643,297
CYPRUS	43	269,112	31	147,173	13	70,460	16	196,926	27	666,502	47	431,662	46	1,077,846
DENMARK	4	83,718	6	129,264	3	107,194	4	147,662	2	883	5	1,011	6	288,302
FINLAND	3	20,781	1	237	3	691	2	1,056	4	61,322	4	14,644	6	31,029
FRANCE	2	11,951	2	203,314	6	397,035	6	481,675	2	238,716	9	332,582	17	605,686
GERMAN DEM. REP.	1	696	2	18,845	...	...	...	...	...	...	4	3,630	1	8,466
GERMANY, FED. REP. OF	9	20,433	9	9,068	3	33,624	2	222,157	2	33,510	6	164,506	6	166,702
GREECE	108	1,044,891	90	1,111,941	66	877,657	112	2,142,926	85	1,610,898	195	3,284,962	186	2,911,426
HONG KONG	3	28,570	1	6,057	2	9,641	4	155,029	5	35,556	5	298,480	11	82,646
INDIA	11	74,289	14	68,066	4	16,731	8	65,218	18	137,590	4	18,884	39	395,906
INDONESIA	3	16,911	1	621	...	...	11	77,112	15	101,720	15	103,303	7	7,841
ITALY	21	165,068	18	88,396	22	171,918	12	97,333	42	696,727	31	130,764	49	603,816
JAPAN	290	755,383	339	973,386	270	1,188,460	346	829,209	453	1,248,383	464	1,286,390	478	1,128,863
KOREA (SOUTH)	...	...	2	60,146	5	41,363	5	37,856	14	453,939	14	460,105	19	217,326
KUWAIT	2	40,195	3	125,807	4	161,322	2	143,196	2	89,965	3	22,494	1	9,859
LIBERIA	55	1,186,070	26	1,169,136	37	1,857,491	64	3,699,207	71	3,187,047	58	2,313,402	95	3,956,147
MEXICO	...	...	1	11,470	...	...	...	...	3	111,625	3	73,062	3	26,072
NETHERLANDS	4	14,610	6	22,338	6	33,338	9	438,188	8	398,874	21	632,357	21	1,187,683
NORWAY	19	162,654	19	26,919	13	36,797	19	441,564	16	827,694	9	583,640	11	273,072
PANAMA	107	1,001,170	99	640,224	55	472,732	134	1,852,874	176	2,396,559	277	2,389,430	255	2,690,468
PHILIPPINES	3	23,337	5	17,032	3	8,463	4	26,796	9	72,435	17	118,409	20	218,028
POLAND	14	21,521	5	3,006	2	1,359	5	10,519	6	91,066	19	83,549	19	56,594
PORTUGAL	3	39,964	4	25,673	2	4,400	4	9,678	4	45,336	1	25,399	4	6,091
SAUDI ARABIA	2	17,892	5	33,149	8	181,589	8	202,660	17	831,651	36	619,577	27	237,376
SINGAPORE	38	332,655	25	149,510	11	64,017	23	243,411	37	631,472	37	247,033	33	236,560
SPAIN	20	60,849	6	12,979	10	23,718	12	138,670	9	78,260	13	72,415	25	460,075
SWEDEN	...	...	1	10,347	1	212	...	...	2	879	4	1,981	4	136,475
TURKEY	2	10,117	1	8,722	1	4,786	6	82,384	2	4,779	2	7,476	10	140,534
U.S.S.R.	29	98,200	29	81,333	123	167,478	131	230,896	97	217,623	124	243,819	525	455,162
UNITED KINGDOM	46	453,862	46	205,696	26	963,771	36	634,102	35	1,067,383	46	606,007	30	374,096
UNITED STATES OF AMERICA	22	206,345	28	270,067	12	108,478	19	232,659	25	346,949	51	663,067	41	437,072
YUGOSLAVIA	4	13,859	4	2,877	1	835	9	64,765	8	31,432	10	41,776	18	109,554
OTHER COUNTRIES	42	313,636	57	267,727	29	160,657	55	266,578	88	635,827	210	1,795,965	260	2,808,557
WORLD TOTAL	923	6,664,524	903	6,021,729	762	7,282,047	1,113	13,624,422	1,310	16,768,847	1,785	17,760,962	2,380	22,229,335

SOURCE: Lloyd's Register of Shipping, Statistical Tables, 1986